RPP DATABASE SCHEMA

Revised 2010 by the Particle Data Group

Particle Data Group
Lawrence Berkeley National Laboratory
Berkeley, CA, USA

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• • • MODIFICATIONS TO EXISTING TABLES • • •

ENCODING
- new columns: encoder_id, overseer_id, coordinator_id. It was determined they could not be used for v0. encoder, overseer, and coordinator look up entries in the TEAM table.
- modified column: person_alias is replaced by person_id (foreign key into PERSON table)
- new constraint: status is foreign key into STATUS table

VERIFIER
- new column: person_id (replaces verifier, which still exists)

TEAM
- modified column: person_alias is replaced by person_id (foreign key into PERSON table)

REFERENCE
- new column: title, for paper title

INST_COUNTRY
- new column: fulfillment_inst_id for fulfillment institution (foreign key into INST_INSTITUTION table)

• • • FUNCTIONALLY DELETED TABLES • • •

ALIASES
   person_id in the verifier table makes this table unnecessary.

RPP_ADDRESS
   person_id in the verifier table makes this table unnecessary.

• • • NEW TABLES • • •

PDG Workspace and PDG Ordering System related tables:
   person, role, authorizations, attribute, resource, permission, constraints, person_attribute, experiment, status, category, task, task_type, logging, user_valid, session, orders, pub_type, sub_type, pub, maillist, person_inst, person_role, person_expt, task_status, order_pub, person_maillist

   These tables are unrelated to the specifically scientific tables, except that all changes to the scientific tables will now be logged in the logging table.

• • • NEW FIELD SUPERSCRIPTS • • •

The ^{k}superscript only refers to primary keys now. Many of the fields labelled previously with that superscript now are labelled with the ^{i}superscript, which indicates they are an index, or part of an index. The other new superscript is ^{f}, which indicates that a field is a foreign key. Many fields now have more than one of these superscripts.

ATTRIBUTE			
ID^k	INT		Primary key.
NAME	CHAR	20	Attribute name.
ATTRTYPE	CHAR	20	Type of attribute (reserved for future use).
DESCRIPTION	CHAR	80	Description of attribute

The attribute table is only used as part of the PDG Workspace. Attribute(s) are associated with a user to indicate that they have permission to use a given resource in the PDG workspace, under possible constraints.

AUTHOR			
ID^k	INT		Unique identifier used for logging changes to the database.
REFERENCE_ID^{if}	INT	5	Foreign key to REFERENCE table.
SORT^i	INT	2	Determines the order in which multiple authors print for a single reference. When a sufficient number of authors have been entered into the data base for a single reference, yet recognition must be given that other authors exist, assign the value 0 to SORT. At time of printing, some standard method will be used to indicate this condition (a '+' following the last author or *et al.*). To indicate that the first author is the same as the SOURCE_NAME, assign the value '-1'.
AUTHOR	CHAR	45	The name of a single author or collaboration for a single reference. When SORT has the value '0' (see above), the value of AUTHOR is ignored. The policy is to list the name of the first author if there are more than three authors on the paper. If there are 3 or less authors, then they are all listed. The format is J.M. Author.
PUBLICATION_STATUS	CHAR	1	'H' indicates that the author and any rows with larger SORT's for REFERENCE_ID should not be printed due to lack of print space. NULL otherwise.

AUTHORIZATIONS			
ID^i	INT		Primary key.
ATTRIBUTE_ID^{kf}	INT		Foreign key to ATTRIBUTE table. Attribute(s) are associated with a user to indicate that they have permission to use a given resource in the PDG workspace, under possible constraints.
RESOURCE_ID^{kf}	INT		Foreign key to RESOURCE table. Typically refers to a form in the PDG Workspace where access needs to be controlled.
PERMISSION_ID^{kf}	INT		Foreign key to PERMISSION table. Refers to a permission granted on a resource, for example read and write.
CONSTRAINT_ID^{kf}	INT		Foreign key to CONSTRAINTS table, which provides finer grained control.
CONSTRAINT_VALUE	CHAR		Value of a constraint. This can be of an arbitrary type, for example a string representing an integer range, or a string indicating a section of a form.

The authorizations table is only used as part of the PDG Workspace.

AVERAGE_CONTROL			
ID[i]	INT		Unique identifier used for logging changes to the database.
NODE[kf]	CHAR	7	Foreign key to TREE table. The code for the type of measurement being averaged. Specifically, the node at which the average and/or scale factor is not to be printed, even when an average is computed from values in multiple data blocks.
SUPPRESS_AVERAGE	CHAR	1	Y to indicate that the average is meaningless and should not be printed. NULL otherwise.
SUPPRESS_SCALE_FACTOR	CHAR	1	Y to indicate that the scale factor is not to be printed. NULL otherwise.
SUPPRESS_COMPUTATION	CHAR	1	Y to indicate that neither average or scale should be printed because computation should be suppressed altogether. NULL otherwise.
MAKE_IDEOGRAM	CHAR	1	Y Always produce an ideogram. N Never produce an ideogram. NULL Produce an ideogram if the average has a poor χ^2 (large scale factor).
ALGORITHM	CHAR	10	The type of algorithm to use to perform averaging (currently not used).

NOTE: In cases where all flags would be set to NULL, the row should be removed from the table (*i.e.*, printing the average and scale factor is the default.)

AVERAGE_MULTIPLE			
ID[k]	INT		Unique identifier used for logging changes to the database.
NODE[if]	CHAR	7	Foreign key to TREE table. See also AVERAGE_CONTROL table.
NODE_EXTRA[if]	CHAR	7	The code for a data block of additional values that are to be included in an average printed at NODE. Foreign key to TREE table.

CATEGORY			
CODE^k	CHAR	2	Abbreviation used for the following field.
NAME	CHAR	80	Full name of category.

The experiment table is only used as part of the PDG Workspace. It indicates the subscriber category for the ordering system.

COLUMN_HEADER			
ID^k	INT		Unique identifier used for logging changes to the database.
NODE^{if}	CHAR	7	The NODE of the data block above which the header is to be printed. Foreign key to TREE table.
TYPE^i	CHAR	1	`T` means the row should only be used in TeX listings. `A` means the row should only be used in ASCII listings. NULL means the row should be used in all types of listings.
SORT^i	INT	5	Determines the order in which text lines are retrieved from the data base for multi-line headers. Multi-line headers will be printed in no-fill mode.
TEXT	CHAR	240	The MEASUREMENT field of the MEASUREMENT table can contain '`@`' characters signifying that multi-columnar information is to be printed. TEXT describes the tabular alignment for the multi-columnar information as well as the label that is to appear at the top of each column.
			Most data blocks will not have multi-columnar MEASUREMENT fields, nor will they have an entry in the COLUMN_HEADER table. For these data blocks a default label will be constructed and this label will contain the units or scaling factor (see UNITS table) of the measurements. The default label can be overridden by entering a different label in the COLUMN_HEADER table. The alternate label will not contain the units or scaling factor of the measurements unless placed there by using the `#units` macro. The alternate label should be specified as the first label in TEXT.
			On each line of TEXT, the first non-blank character on the line will be used as a delimiter character and this delimiter character must precede each label.
			For multi-columnar MEASUREMENT fields that do not need an alternate first label, the first delimiter should be followed with another delimiter and no intervening text.
			Multi-columnar MEASUREMENT fields should have a HEADER_TYPE '`CM`' which in the TEXT field should specify the width of each column, followed by the letter '`L`,' '`R`,' '`C`,' or '`F`' indicating left or right justification, centering, or paragraph filling mode, followed by the inter-column spacing. For TeX, column width and inter-column spacing should be specified in percentage of line length; for ASCII listings, they should be specified in characters and the total (including columns like footnote linkages, SOURCE_NAME, and technique) should not exceed 77 characters. Usually, the SOURCE_NAME of the reference will be printed in the same position on all data blocks. When this first line of TEXT ends with the delimiter, the total amount of space specified will determine the position of SOURCE_NAME.
			Subject to Text Intercept Processing.

COLUMN_HEADER (continued)			
HEADER_TYPE[i]	CHAR	2	The particular tabular alignment needed.
			NULL means that the row contains labels for modifying the measurement column of the measurement data blocks.
			CM means that the row should be used for modifying the tabular alignment of the measurement column of the measurement data blocks.
			LM means that the row should be used for modifying the complete tabular alignment for the measurement data blocks.
			LC means that the row should be used in the decay mode section of the full listings for decay data with conservation laws.
			LN means that the row should be used in the decay mode section of the full listings for decay data with no conservation laws.
			SC means that the row should be used in the summary tables for decay modes with conservation laws.
			SN means that the row should be used in the summary tables for decay modes with no conservation laws.

For example to typeset:

X-SECT	MASS	MONOPOLE	CHG	REFERENCE	YR
cm^2	GeV	EVENTS	G		
$<3\times10^{-38}$		0	<3	FRYBERGER	84
$<1\times10^{-31}$		0	1,3	AUBERT	83
$<4\times10^{-38}$	<10	0	<6	MUSSET	84

COLUMN_HEADER should contain:

TEXT	HEADER_TYPE
@10L2@5R2@9R2@4R2@	'CM'
@X-SECT@MASS@MONOPOLE@CHG	NULL
@#units{}@GeV@EVENTS@G	NULL

CONSERVATION_LAW			
ID[k]	INT		Unique identifier used for logging changes to the database.
NODE[i]	CHAR	7	For data blocks, see TREE table. For decay modes, see DECAY.PAR_CODE.
DESIGNATOR[i]	INT		See DECAY.DESIGNATOR, NULL for datablocks.
LAW[i]	CHAR	5	A conservation law that the particle property tests. B Baryon number. B1 $\Delta B = 1$ weak neutral current. B2 $\Delta B = 2$ forbidden. B2M $\Delta B = 2$ forbidden decay via mixing. C Charge conjugation. C1 $\Delta C = 1$ weak neutral current. C2 $\Delta C = 2$ forbidden. C2M $\Delta C = 2$ forbidden decay via mixing. CP Charge conjugation times parity. CPT CPT invariance. CPV Charge conjugation times parity violation. DC Doubly Cabibbo suppressed. L Total lepton number. LF Lepton family number. P Parity. Q Electric charge. S1 $\Delta S = 1$ weak neutral current. S2 $\Delta S = 2$ forbidden. S2M $\Delta S = 2$ forbidden decay via mixing. SQ $\Delta S = \Delta Q$. T Time reversal. T1 $\Delta T = 1$ weak neutral current.
OMIT_TYPE	CHAR	2	A character or combination of characters, in any order, that indicates when a conservation law should be suppressed. L Suppress from Full Listings. S Suppress from Summary Tables.
NODE_PREFIX	CHAR	7	The RPP_TEXT table rows having RPP_TEXT.NODE = CONSERVATION_LAW.NODE_PREFIX are printed (in paragraph mode) in front of the RPP_TEXT table rows having RPP_TEXT.NODE = CONSERVATION_LAW.NODE.
TEXT	CHAR	1024	This text is printed on a separate line before the conservation law, forming an explanatory header.
INDENTATION_LEVEL	INT		The relative amount of indentation to use. NULL means no indentation, 1 means indent once, 2 means indent twice, *etc.*

CONSTRAINTS			
ID^k	INT		Unique identifier used for logging changes to the database.
NAME	CHAR	20	Constraint name.
TYPE	CHAR	8	Constraint type (for example, integer or string).
DESCRIPTION	CHAR	80	Description of constraint.

The constraints table is only used as part of the PDG Workspace.

CORRELATION			
ID^k	INT		Unique identifier used for logging changes to the database.
NODE_ONE^{if}	CHAR	7	Foreign key to MEASUREMENT table. This is the node of the FIRST measurement being correlated.
REFERENCE_ID_ONE^{if}	INT	5	Foreign key to MEASUREMENT table. This is the reference_id of the FIRST measurement being correlated.
OCCURRENCE_ONE^{if}	INT	1	Foreign key to MEASUREMENT table. This is the occurrence of the FIRST measurement being correlated.
NODE_TWO^{if}	CHAR	7	Foreign key to MEASUREMENT table. This is the node of the SECOND measurement being correlated.
REFERENCE_ID_TWO^{if}	INT	5	Foreign key to MEASUREMENT table. This is the reference_id of the SECOND measurement being correlated.
OCCURRENCE_TWO^{if}	INT	1	Foreign key to MEASUREMENT table. This is the occurrence of the SECOND measurement being correlated.
CORRELATION	NUM		The value of the correlation.
CHANGE_MONTH	INT	2	The number of the month in which the correlation was entered or last modified. In general, it should be automatically be set by entry programs, but the data entry user should be able to disable this feature when only minor corrections are made.
CHANGE_YEAR	INT		The year in which the correlation was entered or last modified. In general, it should be automatically be set by entry programs, but the data entry user should be able to disable this feature when only minor corrections are made.
PUBLICATION_STATUS	CHAR	1	H The correlation was included in the Review at one time, but is no longer to be included. NULL otherwise.

Note: NODE_ONE, REFERENCE_ID_ONE, and OCCURENCE_ONE together uniquely define a line in the MEA-SUREMENT table. NODE_TWO, REFERENCE_ID_TWO, and OCCURENCE_TWO together uniquely define a *different* line in the MEASUREMENT table. It is immaterial which measurement is designated as 'ONE' and which is designated as 'TWO.'

DECAY			
ID[i]	INT		Unique identifier used for logging changes to the database.
PAR_CODE[kf]	CHAR	4	The code of the particle that is decaying. Foreign key to PARTICLE table.
DESIGNATOR[k]	INT	3	Distinguishes one partial decay mode from another for a single particle. The DESIGNATOR can be used in text such as branching ratio headers to call in REACTION from this table for dynamic replacement. Between 1 and 300.
CLUMP	CHAR	1	The type of decay mode. See CLUMP in the RPP_TEXT table. When NULL, the decay mode will print directly under a heading like "$a_0(1200)$ PARTIAL DECAY MODES". The remaining decay modes can be printed in clumps under a user-supplied header such as "Radiative Decays" or "Non-Radiative Decays" and text. The clumps will be sorted by CLUMP.
SORT	INT	5	Determines the order in which a particle's partial decay modes will be renumbered. At print time, the partial decay modes will be listed with designator numbers starting at 1 and incrementing by one and all references to the list of decay modes (branching ratio headers and fit correlation matrices) will be renumbered accordingly. (The DESIGNATORs in the database will retain their original values; only the printed version will be renumbered.)
PUBLICATION_STATUS	CHAR	1	H The decay mode was included in the Review at one time, but is no longer to be published. U The decay mode is an alias for the relationship macro of Text Intercept Processing, but is not to be published in the list of decay modes. NULL otherwise.
DECAY	CHAR	240	The initial and final states and any other pertinent text. Subject to Text Intercept Processing which should not only properly typeset particles, but also should ascertain the masses of these particles for computation of the decay product momentum, $p_{\max}$, which must be stored for updating the RPP Summary Tables. (See also MOMENTUM.) Text Intercept Processing should allow symbolic references to decay modes by using PAR_CODE and DESIGNATOR. Usually, PAR_CODE is the code of the particle being printed, but references to a particle's decays should be allowed from other particles.
MOMENTUM	NUM		The decay product momentum, rounded to the nearest integer, as computed from the particles listed in DECAY. (0.5 rounded up.) In units of MeV/c.
MOMENTUM_TYPE	CHAR	1	N The program pdecay should not calculate the momentum but leave it unchanged. NULL (The usual case.) The program pdecay may calculate the momentum as usual.

DECAY (continued)			
SUBMODE_LEVEL	INT		The relative amount of indentation to use for a mode that is a submode of a previously-printed mode. NULL means no indentation, '1' means "submode", '2' means "subsubmode", *etc.*
OMIT_TYPE	CHAR	1	S The mode should not be printed in the Summary Tables (usually because it is required only for fitting and in conjunction with a fit correlation matrix). NULL otherwise.

DECAY_COMMENT			
ID^i	INT		Unique identifier used for logging changes to the database.
PAR_CODE^{kf}	CHAR	4	Foreign key to DECAY table.
DESIGNATOR^{kf}	INT	3	Foreign key to DECAY table.
PUBLICATION_STATUS	CHAR	1	H The decay mode comment was included in the Review at one time, but is no longer to be published. U The comment is underground, for PDG use only. NULL otherwise.
DECAY_COMMENT	CHAR	240	A comment pertaining to the decay mode. Subject to Text Intercept Processing.
OMIT_TYPE	CHAR	1	S The comment should not be printed in the Summary Tables. L The comment should not be printed in the Full Listings. NULL otherwise.

DECAY_TRANSLATION			
ID^i	INT		Unique identifier used for logging changes to the database.
DECAY_ITEM^k	CHAR	240	A name in the string DECAY.DECAY which is to be parsed.
PARTICLE	CHAR	240	The name of the particle in PARTICLE.TIPNAME that corresponds to DECAY_ITEM. The surrounding macro #p{ and } may be omitted. NULL if DECAY_ITEM is to be ignored in parsing the decay.
TYPE	CHAR	1	T The decay string should be truncated at this point. NULL otherwise.

ENCODING			
ID^k	INT		Unique identifier used for logging changes to the database.
REFERENCE_ID^{if}	INT	5	The identifier of the reference to be encoded. Foreign key to REFERENCE table.
PAR_CODE^{if}	CHAR	4	The code of a particle studied in the reference. NULL means all particles. Foreign key to PARTICLE table.
PAR_PROPERTY^k	CHAR	10	The property of the particle studied (measured) in the reference. NULL means all properties.
CONTENTS	CHAR	1	Whether or not the paper contains any encodable information. NULL Papers whose status is unknown. D Papers that contain data that is in the database. E Papers that have no encodable information.
PUBLISHED	CHAR	1	Whether or not the paper was in the database as of the last publication. NULL Paper was not in the database as of the last publication. P Paper was in the database as of the last publication.
STATUS	CHAR	1	Foreign key to STATUS table. Code for status of the task.
ASSIGN_STATUS	CHAR	2	Indicates several states that a paper can be in, in the case of overseeing and encoding U Paper is unassigned. UE There is an unassigned encoder but an assigned overseer. UO There is an unassigned overseer but an assigned encoder. A Both the encoder and overseer have been assigned.
FINDER	CHAR	10	The name of the physicist who performed the first literature search.
DATE_ENTERED	DATE		The date and time when this encoding was originally entered (which is the default).
STATUS_DATE	DATE		The date and time on which STATUS was last changed.
NOTE	CHAR	50	A comment.
ENCODER_ID^f	INT		Foreign key to TEAM table. Points to name of team associated with the encoder.
OVERSEER_ID^f	INT		Foreign key to TEAM table. Points to name of team associated with the overseer.
COORDINATOR_ID	INT		Foreign key to TEAM table. Points to name of team associated with the coordinator.
ENCODER	CHAR	10	The name of the team associated with the encoder. There can be single person teams. This is no longer in use.
OVERSEER	CHAR	10	The name of the team associated with the overseer. This is no longer in use.
COORDINATOR	CHAR	10	The name of the team associated with the coordinator. This is no longer in use.

EXPERIMENT			
ID^k	INT		Unique identifier used for logging changes to the database.
EXPT_NAME	CHAR	20	Name given to experiment.
EXPT_URL	CHAR	80	Web address of material relating to the experiment.
CONTACT_PERSON	CHAR	80	Person to contact regarding the experiment.

The experiment table is only used as part of the PDG Workspace.

FIT_CONTROL1			
ID^i	INT		Unique identifier used for logging changes to the database.
LABEL^k	CHAR	20	The name of a fit.
ALGORITHM	CHAR	15	The code for the type of fit processing to perform. 'BR', 'BR (NO MATRIX)', 'MASS', 'SPECIAL', or 'IGNORE'.
KEEP_ALL_MEAS	CHAR	1	Y to indicate that poor measurements should not be discarded when calculating the errors. NULL otherwise.
NO_RESCALING	CHAR	1	Y to indicate that the errors should not be rescaled. NULL otherwise.
PARAMETER_COUNT	INT		The number of parameters used in the fit.
DATA_COUNT	INT		The number of measurements used in the fit.
CHI_SQUARE	NUM		The overall χ^2 for the fit.
DATA_TYPES	CHAR	40	A string of eight fields. The last two columns of each field indicate a type of data as described for RELATIONSHIP_EQUATION.TYPE ('T', 'G', 'G+', 'R+', 'G*', 'S*', 'S', and 'BR' [used collectively for TYPE '/', '+', '*', and 'SR']). The first three columns of each field indicate the number of datablocks of the associated TYPE that participated in the fit.
MEASUREMENT_TYPE	CHAR	10	The type of measurement to be included in the fit. All measurements (of the appropriate NODE) with TYPE NULL or TYPE equal to this MEASUREMENT_TYPE will be included in the fit. See MEASUREMENT.TYPE.
DESCRIPTION	CHAR	240	A comment about the fit. This field will be copied to the DESCRIPTION column in the RESULT_SUMMARY table.

FIT_CONTROL2			
ID^i	INT		Unique identifier used for logging changes to the database.
LABEL^{kf}	CHAR	20	The name of a fit to identify in which fit NODE is participating. Foreign key to FIT_CONTROL1 table.
NODE^{kf}	CHAR	7	The code for the type of measurement being fitted. Usually, the datablock at which the fit result is to be printed. See RELATIONSHIP_EQUATION.NODE. Foreign key to TREE table.
TEXT	CHAR	240	Printed with the fit correlation matrix to describe the NODE as an aid in identifying what fit parameters the rows and columns signify. NULL for branching ratios and partial widths since the correlation matrix for fits involving them will be printed below the list of partial decay modes.

FIT_CORRELATION_MATRIX			
ID^k	INT		Unique identifier used for logging changes to the database.
LABEL^{if}	CHAR	20	Identifies which fit calculated the correlation matrix. When recomputing a fit labelled LABEL, all rows in this table with LABEL should first be removed. Foreign key to fit_control1.
TYPE^i	CHAR	2	BR For a matrix element applicable to branching ratios. DR For a matrix element applicable to decay rates.
PAR_CODE_ROW^i	CHAR	4	See RELATIONSHIP.PAR_CODE.
PARAMETER_ROW^i	CHAR	7	A label for a row of the fit correlation matrix. (See also RELATIONSHIP.PARAMETER.)
PAR_CODE_COLUMN^i	CHAR	4	See RELATIONSHIP.PAR_CODE.
PARAMETER_COLUMN^i	CHAR	7	A label for a column of the fit correlation matrix. (See also RELATIONSHIP.PARAMETER.)
COEFFICIENT	NUM		A normalized correlation coefficient in percent to be placed in row PARAMETER_ROW and column PARAMETER_COLUMN.

FIT_SEED			
ID^k	INT		Unique identifier used for logging changes to the database.
LABEL^i	CHAR	20	Identifies the fit being performed.
PAR_CODE^i	CHAR	4	See RELATIONSHIP.PAR_CODE.
PARAMETER^i	CHAR	7	See RELATIONSHIP.PARAMETER.
SEED	NUM		The starting value to be used in fitting for the specified PARAMETER.

FOOTNOTE			
ID^k	INT		Unique identifier used for logging changes to the database.
FOOTNOTE_NODE^i	CHAR	7	See also PLACE below.
			For footnotes with PLACE set to 'D' FOOTNOTE_NODE is suggested to be the same as the NODE of the data block in which the footnote was encountered. (See TREE table.)
			For footnotes with PLACE set to 'S' or to 'P' FOOT-NOTE_NODE is suggested to be set to the particle code and LINKAGE should be made unique so as not to conflict with any other footnotes that also have FOOT-NOTE_NODE set to just the particle code.
LINKAGE^i	CHAR	2	Distinguishes footnotes from each other that belong to the same FOOTNOTE_NODE.
			Traditionally, uppercase letters of the alphabet have been used (in no particular order) as have a few special characters.
			At print time, these are converted into a consistent set of links (all lowercase letters, all integers, *etc.*) in a consistent order.
PLACE	CHAR	1	Determines where the footnote should be printed for a particle.
			D Following the data block that first refers to the footnote. Should not be used with 'P'. Should not be used with 'S' within a section. NULL implies 'D' as does omission of a row from this table for a footnote.
			S Just prior to the end of the current section or subsection or subsubsection and after all data blocks in it. Should not be used with 'P'. Should not be used with 'D' within a section.
			p At the end of the particle after all data blocks, perhaps prior to the references.
			See also PARTICLE.FOOTNOTE_NUMBERING.
PUBLICATION_STATUS	CHAR	1	U The footnote is underground, for PDG use only. (For hidden footnotes, see the FOOTNOTE_LINKAGE table.)
			NULL otherwise.

FOOTNOTE_BODY			
ID^k	INT		Unique identifier used for logging changes to the database.
FOOTNOTE_NODE^i	CHAR	7	See FOOTNOTE table.
LINKAGE^i	CHAR	2	See FOOTNOTE table.
SORT^i	INT	5	Determines the order in which text lines are retrieved from the data base for multi-line footnotes.
TEXT	CHAR	240	Text comprising the footnote. Text for a single footnote may occupy several rows in the data base through use of the SORT field. Subject to Text Intercept Processing.
CHANGE_MONTH	INT	2	The number of the month in which the footnote was entered or last modified. In general, it should be automatically be set by entry programs, but the data entry user should be able to disable this feature when only minor corrections are made.
CHANGE_YEAR	INT		The year in which the footnote was entered or last modified. In general, it should be automatically be set by entry programs, but the data entry user should be able to disable this feature when only minor corrections are made.

FOOTNOTE_LINKAGE			
ID^k	INT		Unique identifier used for logging changes to the database.
MEASUREMENT_NODE^{if}	CHAR	7	The node of the data block referring to the footnote. Foreign key to MEASUREMENT table. See also TREE table.
REFERENCE_ID^{if}	INT	5	Foreign key to MEASUREMENT table.
OCCURRENCE^{if}	INT	1	Foreign key to MEASUREMENT table.
FOOTNOTE_NODE^i	CHAR	7	See FOOTNOTE table.
LINKAGE^i	CHAR	2	See FOOTNOTE table.
PUBLICATION_STATUS	CHAR	1	H The footnote was published at one time, but is no longer to be published. (For underground footnotes, see the FOOTNOTE table.) NULL otherwise.

IDEOGRAM			
ID^i	INT		Unique identifier used for logging changes to the database.
NODE^{kf}	CHAR	7	Foreign key to TREE table.
IDEO_XMIN	NUM		The value of the left-hand edge of the ideogram; the minimum x-value.
IDEO_XMAX	NUM		The value of the right-hand edge of the ideogram; the maximum x-value.
TICK_SEPARATION	NUM		The x-spacing between tick marks.

IGNORE_MINUS			
ID^i	INT		Unique identifier used for logging changes to the database.
NODE^{kf}	CHAR	7	Foreign key to TREE table. The code for the type of measurement being summarized. By default, the sign of values going into summarization is used. When present the sign of values going into the summary computation should be ignored.

INDEX_TAG			
ID^i	INT		Unique identifier used for logging changes to the database.
NODE^k	CHAR	7	Marks the location at which an index entry (for the RPP Full Listings or Summary Tables) is desired. Banner sections and particles are automatically marked and should not have an entry in this table.
TYPE^k	CHAR	1	L For an index entry in the Full Listings. S For an index entry in the Summary Tables.

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INST_ADDRESS			
ID^k	INT		Primary key.
INST_ID^{if}	INT		Foreign key to INST_INSTITUTION table.
SORT^i	INT		Determines the order in which address lines are retrieved from the database.
TYPE	CHAR	1	C for Contact. D for Department. d for address lines that describe only the department, but not the entire institution. This flag permits RPP verifications to suppress department information that conflicts with information for individual people. For example, INST_ADDRESS has the mailstop for the LBL Physics Division Office, and that mailstop is rarely correct for RPP verifiers. In RPP_ADDRESS, an entry such as '`@LBL (SUPPRESS_DEPT)`' will not use TYPE = 'D' or TYPE = 'd' from INST_ADDRESS. NULL for address line. If neither TYPE 'C' or 'D' is present for an institution, verifications are sent to "Secretary, Physics Department." If only 'D' is present, verifications are sent to "Secretary" of the department indicated. If 'D' is present, the department also prints in the Institution List. If only 'C' is present, verifications are sent to the contact *without* a department. Therefore, when an institution should not show a department in the Institution List, but the department is needed to address the verification, put both in as the contact, *e.g.,* `Madame X, Library`).
TEXT	CHAR	120	Contact information, department name, or address line. Address lines entered as they would appear on an envelope. (TeX format)
MODIFICATION_DATE	DATE		Date and time last modified. Automatically generated.

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INST_AUDIT_DELETE			
ID^k	INT		Primary key.
INST_ID	INT		Foreign key in practice to INST_INSTITUTION table.
TABLE_NAME	CHAR	30	The name of the table from which a row is deleted: 'INST_INSTITUTION' 'INST_ADDRESS' 'INST_PHONE' 'INST_NETWORK_ADDRESS' 'INST_WIRE' 'INST_URL' 'INST_TEXT'
INSTITUTION_NAME	CHAR	240	The name of the institution when the row is deleted from the INSTITUTION table.
SLAC_KEY	INT		Key INST from the SLAC/SPIRES INST database record corresponding to the deleted institution when the row is deleted from the INSTITUTION table.
DELETION_DATE	DATE		Date and time the row was deleted from one of the tables listed in TABLE_NAME.

INST_COUNTRY			
ID	INT		Unique identifier used for logging changes to the database.
COUNTRY_ID^k	INT		Primary key.
SORT^i	CHAR	80	Unique code which determines the order of the countries.
UNIVERSAL_TIME	CHAR	30	Number of hours that institution deviates from UTC.
ENTRANCE_CODE	CHAR	30	The number required to dial into the country.
EXIT_CODE	CHAR	30	The number required to dial out from the country.
AREA_EXIT_CODE	CHAR	30	The number required to dial between areas in the country.
INLINE_COMMENT	CHAR	240	Comment about the country.
ZIP_PLACEMENT	CHAR	1	Flag to specify whether zip goes before or after the city.
FORMS_QUERY	CHAR	1	
ISO_ALPHA2	CHAR	2	International standard two-character code for the country.
ISO_ALPHA3	CHAR	3	International standard three-character code for the country.
ISO_NUMERIC	INT		International numeric standard code for the country.
FULFILLMENT_INST_ID^f	INT		Foreign key to INST_INSTITUTION table. Fulfillment institution, e.g. LBNL or CERN.

INST_INSTITUTION			
ID	INT		Unique identifier used for logging changes to the database.
INST_ID[k]	INT		Primary key.
SORT[i]	CHAR	80	Unique code which determines the order of the institutions.
NAME[i]	CHAR	240	The name of the institution (TeX format).
ZIP	CHAR	15	ZIP or postal code.
CITY[i]	CHAR	80	City in which institution is located.
POSTAL_ZONE	CHAR	15	Postal routing information in addition to ZIP.
COUNTRY_ID[f]	INT		Foreign key to INST_COUNTRY table. Country in which institution is located.
UNIVERSAL_TIME	CHAR	30	Number of hours that institution deviates from UTC.
RPP_CODE[i]	CHAR	5	Code corresponding to this institution in RPP.
SLAC_KEY	INT		Key from the SLAC/SPIRES database for this institution.
CATCH_NAME	CHAR	80	Catch name from the SLAC/SPIRES database.
OMIT_TYPE	CHAR	1	Flag to suppress institution (from diary or SLAC).
MODIFICATION_DATE	TIMESTAMP		Date and time last modified.
FORMS_QUERY	CHAR		
NAME_NO_TEX	CHAR	240	The name of the institution (not in TeX format).
CITY_NO_TEX	CHAR	80	City in which the institution is located (not in TeX format).

INST_NETWORK_ADDRESS			
ID[k]	INT		Primary key.
INST_ID[if]	INT		Foreign key to INST_INSTITUTION table.
TYPE[i]	CHAR	1	B for Bitnet I for Internet H for Hepnet
TEXT[i]	CHAR	80	Email node; lowercase.
INLINE_COMMENT	CHAR	240	Comment identifying location of the email node, *e.g.,* HEP, Theory.
MODIFICATION_DATE	DATE		Date and time last modified. Automatically generated.

INST_PHONE			
ID^k	INT		Primary key.
INST_ID^{if}	INT		Foreign key to INST_INSTITUTION table.
SORT^i	INT		Determines the order in which phone numbers are retrieved from the database.
TYPE	CHAR	1	F for Fax numbers. C for Fax confirmation. N for Night numbers. NULL for ordinary phone numbers.
TEXT	CHAR	30	Phone number; incuding area code, excluding country code..
EXTENSION	CHAR	20	Extension associated with phone number.
INLINE_COMMENT	CHAR	240	Comment identifying location of phone, *e.g.,* HEP, Theory, Switchboard.
MODIFICATION_DATE	DATE		Date and time last modified. Automatically generated.

INST_TEXT			
ID^k	INT		Primary key.
INST_ID^{if}	INT		Foreign key to INST_INSTITUTION table.
TYPE^i	CHAR	1	I for Institution. A for Addresses. P for Phones. Note this comment applies to all the phones for the institution. The inline comments are still valid as they apply to invidual rows. N for Networks. Note this comment applies to all the nodes for the institution. The inline comments are still valid as they apply to invidual rows. W for Wires. U for URL. C for Contacts. The email address of the contact persons for updating the institution database.
TEXT	CHAR	240	Comments relating to the Institution, Addresses, Phones, Networks, or Wires. For Institutions only; not for countries.

INST_URL			
ID^k	INT		Primary key.
INST_ID^{if}	INT		Foreign key to INST_INSTITUTION table.
URL^i	CHAR	80	URL (www address)
SORT	INT		Determines the order in which the URLs are retrieved from the database.
INLINE_COMMENT	CHAR	240	Comment identifying location of the URL, e.g., HEP Theory
MODIFICATION_DATE	DATE		Date and time last modified. Automatically generated.

INST_WIRE			
ID^k	INT		Primary key.
INST_ID^{if}	INT		Foreign key to INST_INSTITUTION table.
TYPE	CHAR	1	T for Telex C for Cable
TEXT^i	CHAR	30	Telex or cable address.
CALLBACK	CHAR	30	Optional callback or answerback code associated with telex number.
MODIFICATION_DATE	DATE		Date and time last modified. Automatically generated.

JOURNAL_KEY			
ID^i	INT		Unique identifier used for logging changes to the database.
CODE^k	CHAR	8	An abbreviation for a journal as printed in the references of RPP.
FULL_NAME	CHAR	80	The full name of the journal.
SLAC_CODE	CHAR	5	An abbreviation for a journal as stored in the SLAC SPIRES HEP and CODEN databases.
PUBLICATION_STATUS	CHAR	1	'H' indicates that the abbreviation was published at one time, but is no longer to be published. NULL otherwise.

LOGGING			
ID^k	INT		Primary key.
TABLE_NAME	CHAR	20	Name of table that has been operated on.
TABLE_ROW	INT		Points to row in table based on its id column.
XML	CHAR		XML representation of change that has been made.
TASK_ID	INT		See TASK. Task that is in effect when the change is made.
PERSON_ID	INT		See PERSON. Person associated with this change.
USER_NAME	CHAR	32	Not fully specified yet.
TIMESTAMP	TIME		Date and time at which the change has been made.
TRANSACTION_TYPE	CHAR	1	Code for the type of transaction.
TRANSACTION_ID	INT		Not fully specified yet.
COMMENT	CHAR	128	A comment upon this change.

The logging table contains a history of all transactions that have been made in the database. It depends on there being a column named "id" in every table. In many cases "id" is the primary key. In others, it is not the primary key, but is unique. Triggers associated with each table generate a logging table entry upon every change.

LONG_AUTHOR			
ID[i]	INT		Unique identifier used for logging changes to the database.
LONG_AUTHOR[k]	CHAR	30	Used for DOCUMENT ID's that must be abbreviated due to print space limitations. This is the full name (REFERENCE.SOURCE_NAME).
SHORT_AUTHOR	CHAR	30	The abbreviated form of the name.

NOTES ON REFERENCE PROCESSING

1) Each datum (*i.e.*, a measurement and its errors) is entered as a hierarchical member of a reference. Therefore, the reference must be entered before its reported measurements.

2) There are four cases in which a reference is printed for a particle: measurements of the particle are reported in the reference and at least one such measurement is to be printed; the reference is mentioned in some text or footnote for the particle; the reference is otherwise pertinent to the particle and may be of additional interest to the reader; the reference is an "ALSO" reference that is to follow any of the above three kinds of references.

   In the first two cases, extraction of the references for printing is data-driven. That is, the presence of data for a reference or the presence of text or footnotes making a reference forces the reference to print in the "References" section of the Full Listings for the particle. The OTHER_RELATED_PAPER table contains the references for the third case. These additional references can be printed in clumps under a user-supplied header and text (see CLUMP in the OTHER_RELATED_PAPER table above) such as "REVIEWS", "BIBLIOGRAPHIES", "REPORTS ON SEARCHES", or "THEORETICAL PAPERS".

3) After gathering all the data-driven and additional references for a particle, they are sorted by descending SOURCE_YEAR, ascending SOURCE_NAME, ascending SOURCE_OCCURRENCE within each clump, where the papers referred to and other related papers are also clumps. Then the pertinent ALSO references are sifted into their proper places and sorted by the ALSO_ORDER field.

MAILLIST			
ID^k	INT		Primary key.
NAME	CHAR	80	Name of mailing list.
DESCRIPTION	CHAR	80	Description of mailing list.

The maillist table is only used as part of the PDG Ordering System.

MEASUREMENT			
ID[i]	INT		Unique identifier used for logging changes to the database.
NODE[kf]	CHAR	7	Foreign key to TREE table. Includes a code for the type of measurement being reported.
REFERENCE_ID[kf]	INT	5	The reference containing the reported measurement. Foreign key to REFERENCE table.
OCCURRENCE[k]	INT	1	Usually 1 (which is the default). However, occasionally, one reference will report multiple measurements of the same type, and this field should be used to distinguish such multiple measurements. Furthermore, the value of OCCURRENCE will be used at print time to sort these multiple measurements.
MEASUREMENT	CHAR	150	The value, errors, bounds, irregular data, background estimates, *etc.* as described by the measurement syntax diagrams. At input time, the MEASUREMENT field will be parsed to assure that it conforms to one of a set of acceptable syntaxes. If it does not conform, an error message will be displayed and the user must correct the mistake. For measurements that are to be accepted as is, the field may begin with an asterisk. At print time, MEASUREMENT will again be parsed and typesetting will attempt to line up decimal points, multiply signs, and so on.
EVENT_COUNT	CHAR	20	The number of events, after subtracting background, comprising the reported measurement. The number of events may end with: 'k', 'M', or 'G' signifying '$\times 10^3$', '$\times 10^6$', or '$\times 10^9$', respectively. Background estimates should be made one column of a multi-column MEASUREMENT field. Subject to Text Intercept Processing which means that constructs like `#range{10 - 20}` and `#n{120+-10}` are acceptable.
CONFIDENCE_LEVEL	NUM		The confidence level in percent. For example, `95` or `99.9`.
TECHNIQUE	CHAR	4	The type or name of the detector or the technique used in the experiment.
CHARGE	CHAR	3	The charge reported. `+`, `++`, `-`, `--`, `+-`, and/or `0`.
INLINE_COMMENT	CHAR	240	A brief comment or brief description of the reaction. This text is subject to Text Intercept Processing. Longer commentary should be put in footnotes. See FOOTNOTE table. The input form should limit the encoder to some specific number of characters (where Greek and special symbols are a single character) to ensure that INLINE_COMMENT is kept brief when printed.

MEASUREMENT (continued)			
CHANGE_MONTH	INT	2	The number of the month in which the measurement was entered or last modified. In general, it should be automatically be set by entry programs, but the data entry user should be able to disable this feature when only minor corrections are made.
CHANGE_YEAR	INT		The year in which the measurement was entered or last modified. In general, it should be automatically be set by entry programs, but the data entry user should be able to disable this feature when only minor corrections are made.
PUBLICATION_STATUS	CHAR	1	H The measurement was included in the Review at one time, but is no longer to be included. NULL otherwise.
VERIFICATION_ID	INT		NULL means that a verification needs to be produced for the measurement. Otherwise, VERIFICATION_ID is generated during production of verifications on which this number is printed.
VERIFIER	CHAR	30	A VERIFIER code or person who *returned* the verification to the PDG.
SYSTEMATIC_ERROR_CLUMP	CHAR	1	A flag indicating that measurements with a common systematic error should be pre-processed (by adjusting the systematic errors based on their statistical errors) before being passed to fitting or averaging routines. For N measurements with the same systematic error: $A_i \pm \sigma_i \pm \Delta$ compute a new systematic error $\Delta_i = \sigma_i \Delta \sqrt{\sum_{j=1}^{n} \frac{1}{\sigma_j^2}}$. Then when systematic errors are added in quadrature to statistical errors: $\sigma_{i\,(\mathrm{new})} = \sqrt{\sigma_{i\,(\mathrm{old})}^2 + \Delta_i^2}$.
SYSTEMATIC_ERROR_CLUMP2	CHAR	1	A flag indicating that measurements with a common systematic error should be pre-processed (by adjusting the systematic errors based on their statistical errors) before being passed to the fitting routine. Three measurements in three separate datablocks will have a common flag for the fitting program to adjust their errors. This is for the case in which an experimenter measures two quantities and their difference. Because of correlated systematic errors, the error in the difference may be smaller than it would have been if the measurements were independent. Before fitting, the errors are adjusted so that all three measurements can be treated as independent.

MEASUREMENT (continued)			
PLACE	CHAR	1	A data block of measurements will be printed in three segments: "top" (summaries such as average, fit, estimate, hand-pick, *etc.*), then the "used" portion of the data block, and then the "not used" portion of the data block. The "not used" portion of the data block contains measurements that are not used in any way to determine the summary values that appear in the "top" portion or in the Particle Properties Summary tables. The "used" portion of the data block contains measurements that are used in some way to determine at least one summary value that appears in the "top" portion or that are deemed by the PDG to be worthy of consideration. (To save printing space, an average based on one measurement may not actually be printed in the "top" portion, but will still be put in the RESULT_SUMMARY table for possible use in the Particle Properties Summary table.)
			Only measurements in the "used" portion are candidate contributors to automatic summarizations, such as averaging and fitting. Among the candidates, further criteria may be applied by the summarization algorithm to eliminate some of them from consideration.
			N means that the measurement is to be printed in the "not used" portion of the data block. At time of data entry, PLACE will be set to 'N' for all measurements that are not simply values with errors.
			U means that the measurement is to be printed in the "used" portion of the data block.
			L means that the measurement is to be printed in a bold font in the "used" portion of the data block and that the measurement is a best limit for the data block. The contents of the MEASUREMENT field are to be copied to the RESULT_SUMMARY table. Note that it is sometimes useful to set PLACE = 'L' for branching ratio measurements that are 'dominant', 'seen', 'not seen', *etc.* so that the averaging program will transfer these quantities (and compute others) to the RESULT_SUMMARY table.
			B means that the measurement is to be printed in a bold font in the "used" portion of the data block and that the measurement is a best limit for the data block. This is similar to PLACE = 'L'. However, the contents of the MEASUREMENT field are not to be copied to the RESULT_SUMMARY table.

MEASUREMENT (continued)			
FIT_FLAG	CHAR	1	Usually, a measurement that is used in averaging is also used in fitting. Similarly, a measurement that is not used in averaging is also not used in fitting. However, when one experimenter reports measurements that are dependent on each other, one of them must be removed from the fit, and this flag facilitates this situation. NULL means that the measurement can be used in fitting. The fitting algorithm may eliminate some measurements, such as those in the "used" portion that are not values with errors and those in the "not used" portion. Non-NULL means that the measurement is not to be used in fitting. 'N' is preferred.
TYPE	CHAR	10	The type of measurement to be included in a fit. Measurements with TYPE NULL are always included in a fit. Measurements with a non-NULL TYPE are only included in a fit if their TYPE is equal to the MEASUREMENT_TYPE in FIT_CONTROL1. For most measurements this column TYPE is NULL. This field is used when we wish to fit some measurements in more then one way using different assumptions. For example, in the K_L $\eta_{+-,00}$ phase fits we wish to fit two ways, once assuming CPT and once not assuming CPT. In FIT_CONTROL1 for LABEL = 'K_L eta+-,00 ph CPT' we set MEASUREMENT_TYPE = 'CPT' whereas for LABEL = 'K_L eta+-,00 phase' we set MEASUREMENT_TYPE = 'noCPT'. Then measurements with TYPE NULL are used in both fits, measurements with TYPE = 'CPT' are used only in the 'K_L eta+-,00 phCPT' fit, and measurements with TYPE = 'noCPT' are used only in the 'K_L eta+-,00 phase' fit. When an experiment assumes CPT we set its TYPE = 'CPT' and it will be used only in the fit that assumes CPT. Usually when an experiment does not assume CPT we set its TYPE NULL and it is used in both fits. However, when an experiment reports 2 results, one assuming CPT and one not assuming CPT we set TYPE = 'CPT' for the measurement that assumes CPT and set TYPE = 'noCPT' for the measurement that does not assume CPT.

ORDERS			
ID^k	INT		Unique identifier used for logging changes to the database.
PERSON_ID^f	INT		Foreign key to PERSON table. Person who placed the order. There can be many orders per person.
DATE_PLACED	TIME		Timestamp for when the order was placed.
FULFILLMENT_INST_ID	INT		See INST_INSTITUTION. The institution associated with this order.
DATE_FULFILLED	TIME		Timestamp for when the order was fulfilled.
COMMENT	CHAR	80	General comment on order.

The orders table is only used as part of the PDG Ordering System.

OTHER_RELATED_PAPER			
ID^k	INT		Unique identifier used for logging changes to the database.
PAR_CODE^{if}	CHAR	4	The code of the particle in which the additional reference is to appear. Foreign key to PARTICLE table.
REFERENCE_ID^{if}	INT	5	Foreign key to REFERENCE table. The REFERENCE_ID of the reference that is to appear in the references section of the book for the particle, but that was nowhere mentioned in the particle. In other words, a reference which must be forced to print because it did not report measurements and was not mentioned in text or footnotes.
CLUMP	CHAR	1	The type of reference. See CLUMP in the RPP_TEXT table. When NULL, the additional reference will automatically be printed under a heading like "OTHER RELATED PAPERS".
PUBLICATION_STATUS	CHAR	1	H The related paper was listed in the "OTHER RELATED PAPERS" at one time, but is no longer to be published. NULL otherwise.

PARTICLE			
ID^i	INT		Unique identifier used for logging changes to the database.
PAR_CODE^k	CHAR	4	The code of the particle.
TIPNAME	CHAR	240	The Text Intercept Processing expression for a particle (*e.g.*, $\Upsilon(2S) = \Upsilon(10023)$). Can be used to search for particle codes by name. See also MASS.
QUANTUM_I	CHAR	40	The quantum number "I". For example, 0, 1/2, 1, 3/2, $\cdots$, 3, '?', or NULL.
QUANTUM_G	CHAR	1	The quantum number "G". For example, '+', '−', '?', or NULL.
QUANTUM_J	CHAR	40	The quantum number "J". For example, 0, 1/2, 1, 3/2, $\cdots$, 20, '?', or NULL.
QUANTUM_P	CHAR	1	The quantum number "P". For example, '+', '−', '?', or NULL.
QUANTUM_C	CHAR	1	The quantum number "C". For example, '+', '−', '?', or NULL.
QUANTUM_I_ NOT ESTABLISHED	CHAR	1	Y The quantum number I needs confirmation. NULL otherwise.
QUANTUM_G_ NOT ESTABLISHED	CHAR	1	Y The quantum number G needs confirmation. NULL otherwise.
QUANTUM_J_ NOT ESTABLISHED	CHAR	1	Y The quantum number J needs confirmation. NULL otherwise.
QUANTUM_P_ NOT ESTABLISHED	CHAR	1	Y The quantum number P needs confirmation. NULL otherwise.
QUANTUM_C_ NOT ESTABLISHED	CHAR	1	Y The quantum number C needs confirmation. NULL otherwise.
QUANTUM_COMMENT	CHAR	240	A comment on, or clarification of, the quantum numbers.
RATING	INT		The believability of the particle. (Used only on baryons.) NULL The particle has not been assigned a rating. 1 Evidence weak; could disappear. 2 Not established; needs confirmation. 3 Good, but in need of clarification or not absolutely certain. 4 Good, clear, and unmistakable.
FOOTNOTE_NUMBERING	CHAR	1	Determines how the footnotes are numbered for this particle. C Footnote numbers are continuous throughout the particle. R Footnote numbers are reset after each datablock or section is printed. NULL implies 'C'

PARTICLE (continued)				
OMIT_TYPE	CHAR	1	S	The particle is to be omitted from the particle properties Summary Tables because it is not well established.
			R	The particle is to be omitted from the Summary Tables in the Review and from the Full Listings, but not from the Particle Physics Booklet. These entries are not particles, but rather place holders which explain that there are particles omitted from the Particle Physics Booklet which may be found in the Review.
			D	The particle is to be omitted from the Summary Tables in Particle Physics Booklet, but not from the Review. These entries are omitted only to save space even though they are well established.
			NULL	otherwise.
MASS	NUM			The mass of the particle to be used in determining the momentum of decay modes.
PDG_NUMBER	INT			The number used in the PDG Monte Carlo numbering scheme.
PARTIAL_WAVE	CHAR	4		A partial-wave designation. For syntax, see the `#wave` typesetting macro.

PERMISSION			
ID^k	INT		Primary key.
NAME	CHAR	20	Permission name, for example read or write.
DESCRIPTION	CHAR	80	Description of permission.

The permission table is only used as part of the PDG Workspace.

PERSON			
ID^k	INT		Primary key.
TITLE	CHAR	10	The person's title. For example, Mr. or Dr.
LAST_NAME	CHAR	40	The person's last name.
FIRST_NAME	CHAR	40	The person's first name.
MIDDLE_NAME	CHAR	20	The person's middle name.
EMAIL1	CHAR	80	The person's primary email address.
EMAIL2	CHAR	80	The person's secondary email address.
PHONE1	CHAR	24	The person's primary phone number.
PHONE2	CHAR	24	The person's secondary phone number.
FAX	CHAR	24	The person's FAX number.
DEPARTMENT	CHAR	80	The person's department at their institution.
INST_ID^f	INT		Foreign key to INST_INSTITUTION table (link to institution if it already exists in PDG system).
STREET_ADDR1	CHAR	80	First line of the person's street address.
STREET_ADDR2	CHAR	80	Second line of the person's street address, if any.
STREET_ADDR3	CHAR	80	Third line of the person's street address, if any.
CITY	CHAR	40	The city the person resides in.
STATE_PROVINCE	CHAR	24	The state or province the person resides in.
ZIP_POSTAL_CODE	CHAR	16	The zip or postal code for the person.
COUNTRY_ID^f	INT		Foreign key to INST_COUNTRY table (restricted set of countries).
USER_ID	CHAR	80	Person's user id in PDG Workspace.
PASSWD	CHAR	30	Person's encrypted password for PDG Workspace.
ACTIVE	BOOLEAN		Flag which if false indicates that a person has left the PDG collaboration and they are inactive. Authorship information still needs to be retained.∗
VERIFIED	BOOLEAN		A person is contacted bi-yearly to verify their contact information. This flag reflects their current verification status.

∗ See next page.

PERSON (Cont'd)			
DATE_VERIFIED	TIMESTAMP		Timestamp without timezone indicating when a person's contact information was last verified.
EMAIL1_BOUNCED	BOOLEAN		Flag indicating that an attempt to contact a person via their primary email bounced.
DATE_EMAIL1_BOUNCED	TIMESTAMP		Timestamp without timezone which if non-null indicates the time that an attempt to contact a person via the primary email bounced.
CATEGORY_CODE^f	CHAR	2	Foreign key to CATEGORY table (subscriber categories for ordering system).
SUB_TYPE_CODE^f	CHAR	6	Foreign key to SUB_TYPE table (subscriber types for ordering system).
DATE_NOTIFIED	TIMESTAMP		Timestamp without timezone indicating when the notification email has been sent to a person.
COMMENT	CHAR	80	General comment about a person.

PUB			
ID^k	INT		Primary key.
PUB_TYPE_CODE^f	CHAR	2	Foreign key to PUB_TYPE table. Code for this type of publication.
YEAR	CHAR	4	Publication year.
DESCRIPTION	CHAR	80	Publication description.
IN_STOCK	BOOL		Indicates whether publication is in stock.

The pub table is only used as part of the PDG Ordering System. An example publication is RPP2006 (publication name is stored in pub_type.name).

PUB_TYPE			
CODE^k	CHAR	2	Code for publication type, for example RPP, DI, BL.
NAME	CHAR	80	Name of the ordered publication.
IN_STOCK	BOOL		Indicates whether the publication is in stock.

The pub_type table is only used as part of the PDG Ordering System.

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QIKTAB_BANNERS			
ID^i	INT		Unique identifier used for logging changes to the database.
NODE^{kf}	CHAR	7	Foreign key to TREE table. A banner node. It is a node such as 'MXXX005'.
ALIGNMENT	CHAR	20	The tabular alignment for this node. If NULL the alignment specified in QIKTAB_TABLES will be used.
NEW_COLUMN	CHAR	1	Y to indicate that this banner should begin a new column. NULL otherwise.
COLUMN_LABEL	CHAR	5	The label name for a new ('MESON') column. It consists of the quantum numbers to appear in the label. `IGJPC` The label will be $I^G(J^{PC})$ `IJP` The label will be $I(J^P)$ `NULL` The label will be blank. `Other` The label will be blank.
SPLIT_COLUMN	CHAR	1	Y to indicate that the column containing this banner should be split. NULL otherwise. Do not attempt to split a column at the break between banners. Simply make the second banner begin a new column.

If all the values for a banner node are NULL the banner row may be omitted from the table.

QIKTAB_TABLES			
ID^i	INT		Unique identifier used for logging changes to the database.
TABLE_NAME^k	CHAR	20	The name of a table ('MESON' or 'BARYON').
HEIGHT	NUM		The height of the table.
ALIGNMENT	CHAR	20	The default tabular alignment.
ALIGN_NONE	CHAR	20	The tabular alignment for particle nodes with no quantum numbers. If NULL the value of ALIGNMENT will be used.

Alignments for the 'MESON' table have 3 fields and those for the 'BARYON' table have 4 fields.

Each field consists of 3 items.

1. A number specifying the width of the field in percentage of the line length.
2. A letter indicating the type of field
   L indicates left justification.
   R indicates right justification.
   C indicates centering.
3. A number specifying the amount of space, in percentage of the line length, to be skipped after the field. When omitted zero is assumed.

See the man page stabset(3) for a more complete description of the format of the alignment string.

QUANTUM_REPORTED			
ID^k	INT		Unique identifier used for logging changes to the database.
PAR_CODE^{if}	CHAR	4	The code of the particle whose quantum numbers are reported. Foreign key to PARTICLE table.
REFERENCE_ID^{if}	INT	5	Foreign key to REFERENCE table.
NUMBERS	CHAR	5	The quantum numbers reported in the article. Can be any of the letters 'I', 'G', 'J', 'P', and/or 'C'. They can be entered in any order but will be printed in the order just given, and they will be printed compressed and left-justified.

REFERENCE			
ID[i]	INT		Unique identifier used for logging changes to the database.
SOURCE_NAME[i]	CHAR	30	The name of the first author or the collaboration for the reference.
SOURCE_YEAR[i]	INT		The year in which the referenced article was published; for example, 2002. Currently (Jan 2003) *printed* as 02.
SOURCE_OCCURRENCE[i]	CHAR	2	Usually a space (which is the default). However, when more than one reference have the same SOURCE_NAME and SOURCE_YEAR, the encoder should assign a different SOURCE_OCCURRENCE to each reference. Note that text or footnotes must contain the appropriate SOURCE_OCCURRENCE of references they mention. At print time, references with the same SOURCE_NAME and SOURCE_YEAR will be sorted by their SOURCE_OCCURRENCE, and this character will follow the publication year. For consistency, encoders should use ' ', 'B', 'C', *etc.*
REFERENCE_ID[k]	INT	5	A number assigned at input time to each different reference. All other tables that are logically linked to this REFERENCE table should be so linked through the REFERENCE_ID rather than through the SOURCE_NAME, SOURCE_YEAR, and SOURCE_OCCURRENCE. This facilitates faster searching through tables and allows changes to the source identification without having to modify many other tables.
TITLE	CHAR	120	The title of the reference.
PUBLICATION_NAME	CHAR	60	The journal and page number, conference proceedings, thesis, *etc.*
PUBLICATION_NAME_ FOREIGN	CHAR	1	The journal and page number from which the entry in PUBLICATION_NAME was translated. For example, each SJNP journal was translated from a Russian YAF journal.
TEMPORARY_FLAG	CHAR	1	Y — Temporary references likely to be replaced at a future date with a permanent reference. NULL — Non-temporary references. At data entry time, validation of journal codes could be performed.

REFERENCE_ALSO			
ID^k	INT		Unique identifier used for logging changes to the database.
PAR_CODE^i	CHAR	4	The code of the particle in which the ALSO reference is to appear. NULL means the ALSO paper may appear in any particle that the primary paper does.
REFERENCE_ID_PLACE^{if}	INT	5	The REFERENCE_ID of the reference that the ALSO reference is to follow. (Foreign key to REFERENCE table).
REFERENCE_ID_ALSO^f	INT	5	The REFERENCE_ID of the ALSO reference (foreign key to REFERENCE table).
ALSO_ORDER^i	INT	1	The order that ALSO references should print when more than one are to follow a primary reference. Otherwise, zero.

REFERENCE_COMMENT			
ID^k	INT		Unique identifier used for logging changes to the database.
PAR_CODE^{if}	CHAR	4	The code of the particle in which the reference comment appeared. Foreign key to PARTICLE table.
REFERENCE_ID^{if}	INT	5	Foreign key to REFERENCE table.
SORT^i	INT	5	Determines the order in which text lines are retrieved from the data base for multi-line reference comments.
TEXT	CHAR	240	Text comprising the commentary on a reference. Text for a single reference may occupy several rows in the data base through use of the SORT field. Subject to Text Intercept Processing.
PUBLICATION_STATUS	CHAR	1	H The comment was published at one time, but is no longer to be published. U The comment is underground, for PDG use only. NULL otherwise.

RELATIONSHIP			
ID[k]	INT		Unique identifier used for logging changes to the database.
NODE[i]	CHAR	7	A node comprised of a parameter(s). (See TREE table.)
PAR_CODE[i]	CHAR	4	Used only when PARAMETER is a partial decay mode, the code of the particle to which the PARAMETER belongs. NULL implies PARAMETER is itself a NODE and therefore contains the PAR_CODE as its first four characters.
PARAMETER[i]	CHAR	7	A P as defined by the RELATIONSHIP_EQUATION table. For partial decay modes, PARAMETER is simply the DESIGNATOR of a decay mode (see DECAY table) that comprises the branching fraction or decay rate. Otherwise, the parameter is a datablock participating in a fit, and PARAMETER should be set to the NODE for the datablock.
COEFFICIENT	NUM		A multiplicative factor applied to the PARAMETER (values in the data block). Use NULL for 1; do not use 1. (These coefficients should not include differences in units. Units are determined from the UNITS table.) For example, one partial decay mode might be 70% (.7) of a branching fraction and another partial decay mode might be 30% (.3).
SUMMATION	INT	1	Specifies where the parameter goes in the equation. See RELATIONSHIP_EQUATION table.
ALIAS_FLAG	CHAR	1	Non-NULL means that the PARAMETER should be used in the Text Intercept Processing macro to construct relationships rather than any PARAMETER's for the same NODE and SUMMATION. The NULL ALIAS_FLAG PARAMETERS are still used to construct the guide and for fitting. 'A' is preferred. NULL otherwise.
COEFF_PAR_CODE	CHAR	4	The PAR_CODE for a partial decay mode whose value is to multiply the COEFFICIENT factor. When fitting it is used as a fit parameter if it is in the seeds. NULL if there is none or if COEFF_PARAMETER is itself a node.
COEFF_PARAMETER	CHAR	7	The PARAMETER for a partial decay mode or node whose value is to multiply the COEFFICIENT factor. When fitting it is used as a fit parameter if it is in the seeds. NULL if there is none.

* See next page.

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For example, a fit labelled "KL-KS MASS" would have four rows in this table:

NODE	PARAMETER	SUMMATION	COEFFICIENT
S012M	S012M	1	+1
S013M	S013M	1	+1
S013DM	S012M	1	+1
S013DM	S013M	1	−1

RELATIONSHIP_EQUATION			
ID[i]	INT		Unique identifier used for logging changes to the database.
NODE[k]	CHAR	7	The code for a type of measurement that is comprised of one or more parameters. Text processed by Text Intercept Processing may refer to a NODE in this table; when the relationship is composed of only partial decay modes, the reference will be expanded into lengthier text (like a branching ratio header or decay rate). (See TREE table, although a NODE in the RELATIONSHIP_EQUATION table does not have to also be in the TREE table.)
			For example, a branching fraction is a NODE comprised of partial decay modes; the partial decay modes are the NODE's parameters. Each parameter in a fit should be related (see RELATIONSHIP table) to a single NODE even when this NODE is not in the TREE table. For example, suppose we have partial decay modes Γ_1 through Γ_6 related to branching ratios as follows: $R_1=\Gamma_1/\Gamma_2$, $R_2=\Gamma_2/\Gamma_3$, $R_3=\Gamma_4/\Gamma$, $R_4=\Gamma_5/\Gamma_6$ with R_1, R_2, and R_3 participating in fits. Then additional branching ratio nodes should be declared, as would have been done for R_3, in the RELATIONSHIP table for Γ_1, Γ_2, and Γ_3 like $R_5=\Gamma_1/\Gamma$, $R_6=\Gamma_2/\Gamma$, and $R_7=\Gamma_3/\Gamma$. Γ_5 and Γ_6 do not participate in a fit and so do not require a relationship with a NODE.
TYPE	CHAR	2	The type of equation that describes the NODE's measurements.
			Note below that the coefficients a_i and parameters $P_{1,i}$ (P_i) have SUMMATION=1 as stored in the RELATIONSHIP table, that the coefficients b_j and parameters $P_{2,j}$ have SUMMATION=2 as stored in the RELATIONSHIP table, and that the coefficients c_k and parameters $P_{3,k}$ have SUMMATION=3 as stored in the RELATIONSHIP table. Any null summation (*e.g.*, having no parameters) implies 1.
			/ for a quotient of the form: $$\sum_{i=1} a_i P_{1,i} \ / \ \sum_{j=1} b_j P_{2,j}$$ A printed example: $$\Gamma(K^+\pi^-)/\Gamma(K^-\pi^+ + K^+\pi^-)$$
			+ for a sum of the form: $$\sum_{i=1} a_i P_i$$ A printed example: $$[\Gamma(\pi^+\pi^-) + \Gamma(K^+K^-)]/\Gamma_{\text{total}}$$ This type of equation would also be used for differences in fits.
			(continued)

				RELATIONSHIP_EQUATION (continued)

P/   for a product and quotient of the form:

$$\sum_{i=1} a_i P_{1,i} \times \sum_{j=1} b_j P_{2,j} \Big/ \sum_{k=1} c_k P_{3,k}$$

A printed example:

$$\Gamma(\chi_{c0}(1P) \to p\bar{p})/\Gamma_{\text{total}} \times$$

$$\Gamma(\psi(2S) \to \gamma\chi_{c0}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$$

If the nodes for SUMMATION = 1 (a_i and $P_{1,i}$) and SUMMA-TION = 2 (b_j and $P_{2,j}$) have different initial states, make the node for SUMMATION = 2 (b_j and $P_{2,j}$) have the same initial state as that for SUMMATION = 3 (c_k and $P_{3,k}$) (if possible).

X   for a product of the form:

$$\sum_{i=1} a_i P_{1,i} \times b P_2$$

A printed example:

$$\Gamma(D^\pm \text{ anything})/\Gamma_{\text{total}} \times \mathrm{B}(D^+ \to K^-\pi^+\pi^+)$$

P   for a product of the form:

$$\sum_{i=1} a_i P_{1,i} \times \sum_{j=1} b_j P_{2,j}$$

A printed example:

$$\Gamma(\mu^-\bar{\nu}_\mu\nu_\tau)/\Gamma_{\text{total}} \times \Gamma(e^-\bar{\nu}_e\nu_\tau)/\Gamma_{\text{total}}$$

*   for a product of the form:

$$\sum_{i=1} a_i P_{1,i} \times \sum_{j=1} b_j P_{2,j}$$

A printed example:

$$\Gamma_{\mathrm{i}}\Gamma_{\mathrm{f}}/\Gamma^2_{\text{total}} \text{ in } \pi^\pm\nu_\tau \to \tau^\pm \to e^\pm\nu_e\nu_\tau$$

SR   for a square root of a product of the form:

$$\sqrt{\sum_{i=1} a_i P_{1,i} \times \sum_{j=1} b_j P_{2,j}}$$

A printed example:

$$(\Gamma_{\mathrm{i}}\Gamma_{\mathrm{f}})^{1/2}/\Gamma_{\text{total}} \text{ in } \mu^\pm\nu_\mu\nu_\tau \to \tau^\pm \to e^\pm\nu_e\nu_\tau$$

SQ   for a square root of a product of the form:

$$\Gamma \times \sqrt{\sum_{i=1} a_i P_{1,i} \times \sum_{j=1} b_j P_{2,j}}$$

A printed example:

$$(\Gamma(e^+e^-) \times \Gamma(\mu^+\mu^-))^{1/2}$$

(continued)

RELATIONSHIP_EQUATION (continued)

| | | | G+ | for a partial width: $$\Gamma \times \sum_{i=1} a_i P_i$$ A printed example: $$\Gamma(\pi\ell\nu) + \Gamma(\pi^+\pi^-\pi^0)$$ R+ | for a decay rate: $$\Gamma \times \sum_{i=1} a_i P_i$$ A printed example: $$\Gamma(\pi\ell\nu) + \Gamma(\pi^+\pi^-\pi^0)$$ G* | for a combination of partial widths obtained from integrated cross-sections: $$\Gamma \times \sum_{i=1} a_i P_{1,i} \times \sum_{j=1} b_j P_{2,j}$$ A printed example: $$(\Gamma(\text{hadrons}) \times \Gamma(e^+e^-))/\Gamma_{\text{total}}$$ T+ | for a partial lifetime (mean life). A printed example: $$\tau(N \to e^+\text{anything})$$ S* | for a product of a cross-section and partial widths: $$\sigma(a) \times \sum_{i=1} b_i P_i$$ A printed example: $$\sigma(e^+e^- \to \psi(3770)) \times \Gamma(K^-\pi^+)/\Gamma_{\text{total}}$$ |

RESOURCE			
ID^k	INT		Primary key.
NAME	CHAR	20	Resource name, typically indicating a Web form.
DESCRIPTION	CHAR	80	Description of resource.

The resource table is only used as part of the PDG Workspace.

RESPONSIBILITY			
ID^k	INT		Unique identifier used for logging changes to the database.
PAR_CODE^k	CHAR	4	The code of a particle studied in the reference.
PAR_PROPERTY^k	CHAR	10	The property of the particle studied (measured) in the reference. NULL means all properties.
ROLE^k	CHAR	1	The role. E Encoder. O Overseer. C Coordinator. S Supervising editor.
TEAM^k	CHAR	10	A team (or person_alias) such as 'WOHLSTAB', 'MESON-TEAM', or 'MURA/OLIVE' that is used to look up the PERSON_ALIAS in the TEAM table.

RESULT_SUMMARY			
ID^k	INT		Unique identifier used for logging changes to the database.
PAR_CODE^i	CHAR	4	See RELATIONSHIP table.
PARAMETER^i	CHAR	7	See RELATIONSHIP table. However, when SUMMARY applies to an entire datablock, PARAMETER is the NODE of the datablock.
TYPE^i	CHAR	2	The type of summary. AC The summary is an average computed by machine and automatically put in the database. From a weighted averate of selected data. FC The summary is a fit computed by machine from a constrained or overdetermined multi-parameter fit of selected data and automatically put in the database. The fit may be also hand-entered based on results from an outside fit. In this case, care must be taken to enter the SUMMARY_VALUE, SUMMARY_ERROR_POSITIVE, and SUMMARY_ERROR_NEGATIVE as well as SUMMARY. E The summary is an estimate chosen by a person based on a knowledge of the measurements being summarized. Based on the observed range of the data. Not from a formal statistical procedure. OL Our limit. For special cases where the limit is evaluated by us from measured ratios or other data. Not from a direct measurement. V Our evaluation.∗ Not from a direct measurement, but evaluated from measurements of related quantities. D Determination of a branching fraction from a branching ratio to another mode. DE Determination of "Our estimate" from a branching ratio to another mode. DV Determination of "Our evaluation" from a branching ratio to another mode. DL Determination of "Our limit" from a branching ratio to another mode. L The summary came from the MEASUREMENT table where the PLACE flag indicated a best limit as used, for example, in noting the most current and reliable results of a particle search. Note that 'L' is automatically set for decay modes when that mode came from a datablock containing a best limit. DR Fitted decay rates.

∗ See page after next.

RESULT_SUMMARY (Cont'd)			
LABEL	CHAR	20	For TYPE='FC' and 'DR', LABEL identifies which fit calculated SUMMARY. NULL otherwise. When eliminating a fit, all rows in this table with the LABEL of the fit should be removed.
SUMMARY	CHAR	70	The summary value in a format similar to the MEASUREMENT field in the MEASUREMENT table. NOTE: SUMMARY is usually a computed value and must be recomputed each time a final or proof of RPP is requested in order to assure that the most current value is in the database.∗
SCALE_FACTOR	NUM		A computed scale factor. Should be printed in format F4.1. Scale factors should be rounded to tenths (*i.e.*, 1.05 becomes 1.1). After rounding, factors less than 1.1 should not be printed.∗
PARTICIPANTS	INT	3	The number of measurements that participated in the determination of the SUMMARY. When 1, the SUMMARY should not be printed above the top portion of the data block because the SUMMARY is (should be) the same as the one measurement printed in the top portion of the data block. Zero for fits.
CONFIDENCE_LEVEL	NUM		The confidence level in percent. For example, 95 or 95.9.
DESCRIPTION	CHAR	240	A comment, from a person or from automatic computation, about the summary. Valid for TYPE = 'E', 'V', and 'OL'. Subject to Text Intercept Processing.
IDEOGRAM_FLAG	CHAR	1	NULL means no ideogram should be produced for a datablock. Non-NULL means an ideogram should be produced. 'Y' is preferred.
SUMMARY_VALUE	NUM		For TYPE = 'AC', 'FC', 'DR','L', and 'OL'. (Put in by hand for 'OL'.) Errors are total errors.
SUMMARY_ERROR_POSITIVE	NUM		
SUMMARY_ERROR_NEGATIVE	NUM		
HAND_CHECK_FLAG	CHAR	1	For TYPE = 'E', 'V', and 'OL', NULL means that a physicist has not checked the summarized quantity. 'Y' means that the summarized quantity has been checked.

∗ See next page.

RESULT_SUMMARY (Cont'd)			
SUMMARY_YEAR	INT		The year (four digits) of the edition in which the summary appeared. This field should be NULL for rows used in the current edition and should be set after each edition is published. The current summary values will be compared with the previous edition's summary values to determine if there were significant changes. This field is not shown in the editor.*
SUMMARY_MONTH	INT		The month of the edition in which the summary appeared. This field should be NULL for rows used in the current edition and should be set after each edition is published. The current summary values will be compared with the previous edition's summary values to determine if there were significant changes. This field is not shown in the editor.*

* Rows having SUMMARY_YEAR less than 1990 were inserted from the old history plot data file and were arbitrarily assigned TYPE ='V' since it would be too tedious to research all old editions. There was much hand-editing, rescaling of total errors, and determination of appropriate nodes and modes which may contribute to mistakes in this old information. In some cases, scale factors were marked as unknown; in other cases they were omitted, so it is impossible to know if SUMMARY has scaled or unscaled total errors when the scale factor was omitted. In the old history plot data file, total errors were not scaled before 1967; however, when put in the database, they were all scaled to be consistent with later results.

RPP_INSTITUTION			
ID^i	INT		Unique identifier used for logging changes to the database.
REFERENCE_ID^{kf}	NUM	5	Foreign key to REFERENCE table.
SORT^k	NUM	2	Determines the order in which multiple institutions print for a single reference. When a sufficient number of institutions have been entered into the data base for a single reference, yet recognition must be given that other institutions exist, assign the value '0' to SORT. At time of printing, a standard method is used to indicate this condition (a '+' following the other institutions or *et al.*).
INSTITUTION_CODE	CHAR	45	The code of a single institution or a collaboration string for a single reference. When SORT has the value '0' (see above), the value of INSTITUTION is ignored. See also the INST_INSTITUTION table from which the HEP Institution List is produced.
PUBLICATION_STATUS	CHAR	1	'H' indicates that the institution and any rows for REFERENCE_ID with larger SORT's should not be printed due to lack of print space. NULL otherwise.

SEQUENCE NUMBER GENERATORS
Sequence Number Generators (see PostgreSQL User's Guide)
ID is present in all tables. It is the largest number in use to uniquely identify a row. The naming convention for these sequences is id_seq_tablename. Note that some tables may have other sequences in use.
REFERENCE_ID is the largest number in use to uniquely identify references.
INST_ID is the largest number in use to uniquely identify institutions.
COUNTRY_ID is the largest number in use to uniquely identify countries.
VERIFICATION_ID is the largest number in use to uniquely identify verifications.

RPP_TEXT			
ID^k	INT		Unique identifier used for logging changes to the database.
NODE^{if}	CHAR	7	Foreign key to TREE table. However, for text that belongs to a reference section or partial decay mode section or footnote section or a clump in any of the sections, NODE is simply the particle code.
TYPE^i	CHAR	1	The type of text: H The text is to be set as a header in the style appropriate to the level in the tree to which this text belongs.‡ h The text is to be set after any header and before any measurements in the style appropriate to the level in the tree to which this text belongs. a The text is to be set directly after measurements of the data block identified by NODE. D The text is a decay mode section header. d The text is to be set directly after the decay mode section header. F The text is a footnote section header. f The text is to be set directly after the footnote section header. R The text is a reference section header. r The text is to be set directly after the reference section header. C The text is a conservation law header. M The text is a paste-up instruction (usually for mini-reviews). Place before a node is output. N The name of the datablock node. Not used in node datablocks for the Listings or the Summary Table. Often used in footnotes especially those generated automatically. I The text is the title of an ideogram subject to Text Intercept Processing. If for this case TYPE = 'I' is not present then the text of TYPE = 'H' is used. T The TEXT should be printed in the RPP Summary Tables as a single line of output text. See also TREE.DATA_TYPE, TREE.CLUMP, and TEXT.CLUMP. When NODE is a datablock, then TEXT is a label for the summarized quantity (*e.g.*, $m_{D^\pm} - m_{D^0}$ or Γ_{Σ^+}), and CLUMP should be NULL. If for this case TYPE = 'T' is not present and there is no default, then the text of TYPE = 'H' is used. When NODE is a banner or particle code and CLUMP is NULL, the text will follow the TYPE = 'H' text for that node. When NODE is a particle code and CLUMP corresponds to TREE.CLUMP for a datablock or a group of datablocks, then TEXT is printed as a header for the datablock(s). (continued on next page)

RPP_TEXT (continued)			
			t The TEXT should be printed in the RPP Summary Tables as a paragraph. When NODE is a datablock, then TEXT is a comment about the quantity summarized, and CLUMP should be NULL. When NODE is a particle code and CLUMP corresponds to TREE.CLUMP for a datablock or a group of datablocks, then TEXT is printed as text that follows clump header text of TYPE = 'T'. When NODE is a banner or particle code and CLUMP is NULL, TEXT is printed as text that follows the banner or particle name. P The TEXT should be printed at the top of final RPP Full Listings showing the reader which particles (and sometimes minireviews) appear on the page. It is implemented with TEX's \mark primitive.
SORT^i	INT	5	Determines the order in which text lines are retrieved from the data base for multi-line text.[‡]
CLUMP^i	CHAR	1	Provides a mechanism for labelling groups of related decay modes, references, or summarized quantities with headers by using TYPE = 'D', 'R', or 'T', respectively, and for further describing those groups in paragraphs by using TYPE = 'd', 'r', or 't'. The value of CLUMP should correspond to DECAY.CLUMP, OTHER_RELATED_PAPER.CLUMP, or TREE.CLUMP.
PUBLICATION_STATUS	CHAR	1	H The text was published at one time, but is no longer to be published. U The text is underground, for PDG use only. NULL otherwise.
TEXT	CHAR	240	Text subject to Text Intercept Processing.[‡]

[‡]The first row of banner section text is ultimately joined to the public database's PARTICLE.BOOK_SECTION, so the first text row should be worded in a manner that will describe its particles.

SESSION			
ID^k	INT		Primary key.
PERSON_ID	INT		Foreign key to PERSON table. Contains information on all people associated with PDG.
START_TIME	TIME		Date and time that session involved with the PDG Workspace was started.
END_TIME	TIME		Date and time that session ended.
NORMAL_EXIT	BOOL		Whether or not session ended normally, with a logout.

The session table is only used as part of the PDG Workspace. A row is entered each time a person logs in via a browser.

STATUS			
CODE^k	CHAR	1	The abbreviation for the status of the encoding. U Papers that are unreleased. R Papers that have been released to encoders. A Papers that have been assigned to encoders or overseers. E Papers for which the encoder is finished. O Papers for which the overseer is finished. C Papers that have been accepted. V Papers that have been verified. P Papers that have been published.
NAME	CHAR	20	Full name of encoding task status. Is one of Unreleased, Released, Assigned, Encoded, Overseen, Accepted, Verified, Published.

SUB_TYPE			
CODE^k	CHAR	6	Code, for example pub, spoke, inst.
NAME	CHAR	80	Name for sub_type, for example, general public.

The sub_type table is only used as part of the PDG Ordering System.

SYMBOL			
ID^i	INT		Unique identifier used for logging changes to the database.
MACRO_NAME^k	CHAR	20	The argument of the `#def` macro.
TYPE^k	CHAR	5	'TEX' or 'ASCII'.
TEXT	CHAR	240	Typesetting instructions that produce a symbol.
BIG	CHAR	1	Either `Y` or NULL. Not sure what this does. Instruction to TEX that allows the symbol to be made big?
BLANK_SURROUND	CHAR	1	Either `Y` or NULL. Not sure what this does. Instruction to TEX that surrounds the symbol with blanks?

TABLE_FOOTNOTE_BODY			
ID^i	INT		Unique identifier used for logging changes to the database.
LINKAGE^k	CHAR	3	Distinguishes Table footnotes (Summary Tables, Conservation Laws, Full Listing decay modes) from each other.
SORT^k	INT		Determines the order in which text lines are retrieved from the data base for multi-line footnotes.
TEXT	CHAR	240	Text comprising the footnote. Text for a single footnote may occupy several rows in the data base through use of the SORT field. Subject to Text Intercept Processing.
CHANGE_MONTH	INT	2	The number of the month in which the footnote was entered or last modified. In general, it should be automatically be set by entry programs, but the data entry user should be able to disable this feature when only minor corrections are made.
CHANGE_YEAR	INT		The year in which the footnote was entered or last modified. In general, it should be automatically be set by entry programs, but the data entry user should be able to disable this feature when only minor corrections are made.

TABLE_FOOTNOTE_LINKAGE			
ID^k	INT		Unique identifier used for logging changes to the database.
NODE^i	CHAR	7	The node or the particle code of the decay mode referring to the footnote.
DESIGNATOR^i	INT		When NODE is a particle code, this field contains the designator of the decay mode to which a footnote is attached. NULL otherwise.
TYPE	CHAR	1	The type of text (see RPP_TEXT.TYPE) to which the footnote is attached. H for banners and particle names. T for clump headers and datablock values. t for datablock comments and text that follow clump headers, banners, and particle names. NULL for decay modes.
CLUMP	CHAR	1	The clump header (TYPE 'T') or text that follows a clump header (TYPE 't') to which the footnote is attached. (See RPP_TEXT.CLUMP.) NULL for non-clump text.
TEXT_SORT	INT		For banners, particle names, and clump headers, this field corresponds to RPP_TEXT.SORT indicating the particular row of text to which the footnote is attached.
USAGE	CHAR	1	L The footnote should appear only in the Full Listings. S The footnote should appear only in the Summary Tables. C The footnote should appear only in the Conservation Law Tables. NULL The footnote should appear in all types of output.
CONSERVATION_LAW	CHAR	2	For datablocks in the Conservation Law Tables or any decay mode associated with a conservation law, this field specifies the specific law where the footnote is to be attached. If the footnote applies universally, regardless of the law, this field is not required. See CONSERVATION_LAW.LAW (p. 8).
LINKAGE	CHAR	3	See TABLE_FOOTNOTE_BODY table.
PUBLICATION_STATUS	CHAR	1	H The footnote was published at one time, but is no longer to be published. U The footnote is underground, for PDG use only. NULL otherwise.

TASK			
ID^k	INT		Primary key.
TASK_TYPE_ID^f	INT		Foreign key to TASK_TYPE table, which indicates the type of task being performed.
CREATION_TIMESTAMP	TIME		The time the task was created.
PERSON_ID	INT		Foreign key to PERSON table, which contains all PDG users.
COMMENT	CHAR	80	Comment about this task.

The task table is only used as part of the PDG Workspace.

TASK_TYPE			
ID^k	INT		Primary key.
CODE^k	CHAR	2	Two-letter task type code.
NAME	CHAR	80	Name of the task.

The task_type table is only used as part of the PDG Workspace.

TEAM			
ID^k	INT		Unique identifier used for logging changes to the database.
TEAM^k	CHAR	10	The name of a multiple-person team such 'MESONTEAM', or a single-person team such as DOSER.
PERSON_ALIAS^k	CHAR	10	An identity such as 'WOHLSTAB' that is used for the ENCODER, OVERSEER, or COORDINATOR in the ENCODING table. Can be used to determine whether this is a single or multiple-person team (they will be different in the latter).
PERSON_ID^f	INT	5	Foreign key to PERSON table. Person who is the member of the team.

TECHNIQUE_KEY			
ID^i	INT		Unique identifier used for logging changes to the database.
CODE^k	CHAR	4	The abbreviation for a type or name of detector or for a technique used in experiments.
FULL_DESCRIPTION	CHAR	80	The description for a type or name of detector or for a technique used in experiments.
PUBLICATION_STATUS	CHAR	1	H The abbreviation was published at one time, but is no longer to be published. NULL otherwise.

TECHNIQUE_LOCATION			
ID^k	INT		Unique identifier used for logging changes to the database.
TECHNIQUE_CODE^{if}	CHAR	4	Foreign key to TECHNIQUE_KEY table.
INSTITUTION_CODE^i	CHAR	5	The code of the institution (see also INST_INSTITUTION table) at which a particular detector is located.

TITLE			
ID^k	INT		Unique identifier used for logging changes to the database.
TYPE^i	CHAR	1	The type of text: H The text is a section header for conservation laws. C The text is a title for a conservation law. c The text is a subtitle for a conservation law. T The text is a default name for a data type.
NAME^i	CHAR	5	The conservation law or the data type
CLUMP^i	CHAR	1	Provides a mechanism for labelling groups of related conservation laws D The text is for a Discrete Space-Time Symmetry N The text is for a Number Conservation Law NULL The text is not for a conservation law
SORT	INT	5	Determines the order in which text lines are retrieved from the data base
PUBLICATION_STATUS	CHAR	1	H The text was published at one time, but is no longer to be published. U The text is underground, for PDG use only. NULL otherwise.
TEXT	CHAR	240	Text subject to Text Intercept Processing.

TREE			
ID^k	INT		Unique identifier used for logging changes to the database.
NODE^k	CHAR	7	A unique code representing the separate subunits of RPP. There are five possible levels plus data blocks. 1 The highest level nodes subdivide the stables, mesons, and baryons into portions such as: lepton searches and bosons within the stables; the different meson states; the N baryons and Δ baryons. Also called banner sections. 2 The next level represents the particles (where NODE matches PAR_CODE in other tables). Upon encountering a node at this level while traversing the tree, print programs should flush all footnotes and references for the previous particle and re-initialize "P-card" and footnote numbering for the particle encountered. 3 The next level represents sections. 4 The next level represents subsections. 5 The next level represents subsubsections. To assure uniqueness among NODEs and for proper update access to footnotes, the NODE of all segments within a single particle begin with the particle code. Data blocks are always leaf nodes that can be below levels 3, 4, and 5 (children of sections, subsections, and subsubsections). Data blocks cannot be in mixed levels; for example, suppose a section contains three data blocks, two of which need to be put in a subsection. The third data block must also be put in a subsection, even if it is essentially a dummy subsection lacking a subsection header. To insert text like mini-reviews between particles or descriptive text between data blocks extra nodes can be put in the tree which refer only to the appropriate text.
PARENT	CHAR	7	NODE is the child of PARENT. Set to NULL for the uppermost level of the tree. Otherwise, PARENT must be also be a NODE in the TREE table.
CHILD^i	CHAR	7	The first child of NODE. Set to NULL when NODE is for a data block and for text insertions as described above. Otherwise, CHILD must be also be a NODE in the TREE table.
SIBLING	CHAR	7	SIBLING is the first sibling of NODE. Set to NULL when NODE has no siblings. Otherwise, SIBLING must be also be a NODE in the TREE table.
TYPE	CHAR	1	B Indicates the beginning of a particle. D Indicates a data block. L Indicates that the node is for partial mean lives. (The node will have no children.) P Indicates that the node is for partial decay modes. (The node will have no children.) NULL otherwise.

TREE (continued)				
PUBLICATION_STATUS	CHAR	1	H	The node and its children, grandchildren, pertinent references, *etc.* were published at one time, but are no longer to be published. It is possible to suppress an entire segment of the publication by pruning a portion of the tree with this flag.
			NULL	otherwise.
DATA_TYPE	CHAR	1		A flag indicating the type of data that is in a datablock (TYPE = 'D'). DATA_TYPE must be set for all datablocks for which RESULT_SUMMARY.SUMMARY is to be printed in the RPP Summary Tables as well as all datablocks that can be set with a flag listed below. DATA_TYPE may also indicate a corresponding value in RPP_TEXT.CLUMP for which RPP_TEXT.TEXT is a clump header for the datablock. RPP_TEXT.TYPE should be set to 'T'.
			NULL	Indicates a datablock that is not to be included in the RPP Summary Tables and does not fall into one of the following categories.
			C	Calculated value: $c\tau$.
			D†	Indicates a mass difference.
			E	Indicates the partial width, Γ_{ee}.
			G	Indicates a full width datablock.
			M	Indicates a mass datablock.
			P	Calculated value: p_{beam}. Used in the baryon resonances.
			L	Calculated value: $\widehat{\sigma} = 4\pi\lambdabar^2$ (mb). Used in the baryon resonances.
			S	Indicates a cross section datablock.
			T	Indicates a lifetime datablock.
			c†	Indicates a coupling constant ratio.
			d†	Indicates a decay parameter.
			e	Indicates electric dipole moment.
			f†	Indicates a form factor.
			g	Indicates mean life (for Ω, Ω^-) – used in the specific case of S024 when there are 2 mean lifes for one particle
			m	Indicates a magnetic moment datablock.
			s†	Indicates a slope parameter.
			v†	Indicates a CP-violation parameter.
			OTHER†	Any other character that the user desires. It is usually the same as an appropriate TREE.CLUMP and RPP_TEXT.CLUMP.
				†Only DATA_TYPE shown with a dagger require corresponding descriptions, entered in the RPP_TEXT table, to be printed in RPP Summary Tables. However, whenever there *is* a corresponding description in the RPP_TEXT table, it will supercede the default description. For example, for DATA_TYPE = 'M' the default is "Mass m" which might be overridden with "Mass m (neutral)".

TREE (continued)			
OMIT_TYPE	CHAR	10	A character or combination of characters, in alphabetic order, that indicates when a node should be suppressed (*e.g.* 'LM'). S Suppress from Summary Tables and Monte Carlo data. M Suppress from Monte Carlo data. L Suppress from Full Listings. NULL otherwise.
CHARGE	CHAR	10	The charge(s) of the particle property measured. Used only with mass, width, and lifetime nodes. Any combination, in any order, separated by blanks, of -, 0, +, and/or ++. NULL means all possible charges.
HEADER_LEVEL	INT		The level to be used for headers. See the NODE column. NULL is the usual case. The tree level is used for the header level. 1 represents banners (bosons, leptons, mesons, baryons, etc) 2 represents particles. 3 represents sections. 4 represents subsections. 5 represents subsubsections. 6 is like level 3 without a separating line. 7 is like a datablock with a separating line. 0 represents datablocks.
CLUMP	CHAR	1	See RPP_TEXT.CLUMP

UNITS			
ID^k	INT		Unique identifier used for logging changes to the database.
NODE^{if}	CHAR	7	Foreign key to TREE table. A code for the type of measurement to which the units apply.
POWER_OF_TEN	CHAR	3	Ten raised to POWER_OF_TEN serves as a factor by which data is to be scaled.
TEXT	CHAR	240	The units (without scale factor) of the measurements reported in the data block indicated by NODE. Subject to Text Intercept Processing. (The text should not include the word 'units'.) When TEXT='eV', 'keV', 'MeV', 'GeV', 'TeV', 'sec', 'msec', 's', or 'ms', calculation routines should use POWER_OF_TEN and TEXT to determine an appropriate normalized scale factor.
SUMMARY_YEAR^i	INT		The year (four digits) of the edition in which the measurements appeared. This field should be NULL for rows used in the current edition and should be set after each edition is published. This field is not shown in the editor. The purpose of this field is to ensure that the units used with a previous year's measurements are retained while the units in the current edition may change. See also RESULT_SUMMARY.SUMMARY_YEAR.
SUMMARY_MONTH^i	INT		The month of the edition in which the measurements appeared. This field should be NULL for rows used in the current edition and should be set after each edition is published. This field is **not** shown in **forms**. The purpose of this field is to ensure that the units used with a previous year's measurements are retained while the units in the current edition may change. See also RESULT_SUMMARY.SUMMARY_MONTH.

UNITS_NONE			
ID^i	INT		Unique identifier used for logging changes to the database.
NODE^k	CHAR	7	Primary key, and foreign key to TREE table. A code for the type of measurement which will never have units, such as ratios, form factors, and parameters. Branching ratios do not need to be entered in this table because they are known as ratios from the RELATIONSHIP_EQUATION table.

USER_VALID			
ID^k	INT		Primary key, and foreign key to PERSON table.
NEW_EMAIL1	CHAR	80	Address to be validated.
VALID_TOKEN	CHAR	24	The time the task was created.
VALID_TIME	TIME		Timestamp for when validation occurred.

The user_valid table is only used as part of the PDG Ordering System. It is a supplementary table to PERSON, for sparse data for user email validation.

VALID_VALUE			
ID^k	INT		Unique identifier used for logging changes to the database.
COLUMN_NAME^i	CHAR	60	The 'tablename.columnname' for which a valid value is being specified.
VALID_VALUE^i	CHAR	240	An acceptable input value for the 'tablename.columnname'.
SORT	INT		The optional order in which valid values should be presented to the user either when requesting a List-of-Values in SQL*Forms or when preparing reports.
TEXT	CHAR	240	A description of the valid value.

VERIFICATION_HISTORY			
ID^k	INT		Unique identifier used for logging changes to the database.
RUN_DATE	DATE		The date on which verifications are produced.
MINIMUM_DATE	DATE		The date (month and year) at which the verifications begin.
MAXIMUM_DATE	DATE		The date (month and year) at which the verifications end.
START_NODE	CHAR	7	Foreign key to TREE table. The first node in the TREE for which verifications are produced.
END_NODE	CHAR	7	Foreign key to TREE table. The last node in the TREE for which verifications are produced.

VERIFIER			
ID^k	INT		Unique identifier used for logging changes to the database.
REFERENCE_ID^f	INT	5	Foreign key to REFERENCE table.
NODE^i	CHAR	7	Verifications can be sent to any number of verifiers for each reference. To link a VERIFIER to a specific data-block, use MEASUREMENT.NODE for NODE; to link a VERIFIER to an entire particle, use the PAR_CODE for NODE; to link a VERIFIER to an entire section of the book, use 'S', 'M', or 'B' for stables, mesons, or baryons. NULL means that VERIFIER should be used for all measurements. The VERIFIER code used for any particular data block will be established in the priority just explained.
VERIFIER	CHAR	10	A code, usually a collaboration name, indicating to whom verifications will be mailed. Foreign key to RPP_ADDRESS table in practice.
PERSON_ID^f	INT	5	Foreign key to PERSON table. Person who is the verifier. For future use.

The following tables are not described elsewhere in the redbook. Some will go away in the future. In the source for this, it indicates that some tables are used by both the editor and encoder. Where it is not obviously used the encoder, these tables are marked as belonging only to the editor interface.

OTHER TABLES			
TABLE NAME	USED BY	TYPE	DESCRIPTION
aliases	Ed., L.	Permanent	To become obsolete in a later version. Stores aliases for person.
current	Ed., Enc., L.	Permanent	Citations and urls for review.
dangerous_operations	Ed., Enc.	Permanent	List of dangerous operations in encoder interface.
debug_logs	Ed.	Auto.	Auto-generated from rppfun.scm (special logs for 'treesorting').
decay_link	L.	Permanent	pdgLive internal links; exceptions.
encoding_work	P.	Temporary	
firstpage	L.	Permanent	pdgLive first page contents.
footnote_body_link	L.	Permanent	pdgLive internal links, exceptions.
foreign_journal	L.	Permanent	Foreign journal translations.
forms_homepage	Ed.	Permanent	Editor first page contents.
fpage	L.	Permanent	List of sections (groups) for pdgLive first page.
helptables	Ed., Enc.	Permanent	HTML for help pages.
inline_comment_link	L.	Permanent	pdgLive internal links, exceptions.
institution_code_work	P.	Temporary	
journal_key	Ed., L.	Permanent	
logcols	Ed	Permanent	Log table, column names and updated values.
logdrps	Ed.	Permanent	Log table, ids for deleted lines.
logdrpv	Ed.	Permanent	Log table, deleted values.
log_checked	Ed.	Permanent	Log table, checked dangerous logs.
logins	Ed.	Permanent	Log table, transactions (table names and types).
logta	Ed.	Permanent	Log table, transactions (table names and types).
logupdcl	Ed.	Permanent	Log table, ids for updated lines.
logupds	Ed.	Permanent	Log table, updated values.
long_author	Ed.	Permanent	

Ed. refers to the editor, Enc. to the encoder, L. to pdgLive, P. to the programs, and O. to the ordering system. Some tables are used by multiple components.

OTHER TABLES (continued)			
macros	Ed.	Permanent	Generates list of macros to test parser.
measurement_temp	None	Permanent	
mwparticle	Ed.	Permanent	Generates computer readable file for mass and width.
ref_info	Ed., L.	Permanent	Additional reference information exported from spires.
reference_messages	Ed., Enc.	Permanent	Reference messages in encoder interface (no longer in use there).
reference_notes	Ed.	Permanent	Reference notes (ex meson_team table).
reference_used	Ed., P.	Temporary	
reference_work	Ed., P.	Temporary	
relationship_correction	None	Permanent	Test table for relationship coefficients.
relationship_equation_tmp	Ed.	Permanent	Relationship equation for temporary node.
relationship_tmp	Ed.	Permanent	Relationship for temporary node.
reviews	Ed.	Permanent	Titles and locations for reviews.
rpp_address	Ed., L.	Permanent	To become obsolete in a later version. Stores addresses.
rpp_text_link	L.	Permanent	pdgLive internal links; exceptions.
rppusers	Ed.	Permanent	User names, passwords, and initials.
speller	L.	Permanent	speller (English vocabulary).
summary_link	L.	Permanent	Links from summary to datablocks (special cases)
table_footnote_body_link	L.	Permanent	pdgLive internal links; exceptions
temporary_node	L.	Permanent	Temporary node.
treesort2	L.	Permanent	Linearized tree table, needed to view the tree (gen with EXEC-TREESORT.BRL
units_tmp	Ed., L.	Permanent	unit for temporary node
verification_history	Ed.	Permanent	
www_editor	Ed.	Permanent	Editor interface first page customization.
ORDERING SYSTEM	O.	Permanent	join tables: order_pub, person_attribute, person_experiment, person_inst, person_maillist, person_preference, person_role, rpc, task_status

Items in capitals must be entered with all uppercase letters.

'`blank`' means a space character(s). '`single_blank`' means a single space.

 The MEASUREMENT field of the MEASUREMENT table may be of the following form:

```
                       _____
                      |       |
                      |       |
--------------->| value |--------------------------------------->
      ^       |  |_____|                        ^        |
      |       |   _____                   |        |
      |       |  |             |                  |        |
      |       |->| approx_value |---------->|     |        |
      |       |  |_____|                  |        |
      |       |   _____                       |        |
      |       |  |         |                      |        |
      |       |->| range-1 |--------------->|     |        |
      |       |  |_____|                      |        |
      |       |   _____                       |        |
      |       |  |         |                      |        |
      |       |->| range-2 |--------------->|     |        |
      |       |  |_____|                      |        |
      |       |   _____                       |        |
      |       |  |         |                      |        |
      |       |->| range-3 |--------------->|     |        |
      |       |  |_____|                      |        |
      |       |   _____                      |        |
      |       |  |          |                     |        |
      |       |->| br_adjust |------------->|      |        |
      |       |  |_____|                     |        |
      |       |   _____                       |        |
      |       |  |         |                      |        |
      |       |->| dep_meas |--------------->|     |        |
      |       |  |_____|                      |        |
      |       |   _____                 |        |
      |       |  |               |                |        |
      |       |->| multiple_values |------->|      |        |
      |       |  |_____|                |        |
      |       |   _____                         |        |
      |       |  |       |                        |        |
      |       |->| string |---------------->|      |        |
      |       |  |_____|                        |        |
      |       |   ___      _____          |        |
      |       |  |   |    |             |         |        |
      |       |->| * |-->| user_string |--->|     |        |
      |       |  |___|    |_____|         |        |
      |                    ___                             |
      |                   |   |                            |
      -----------------| @ |<--------------------
                        |___|
```

'**string**' may be of the following form:

```
blank
seen
not seen
possibly seen
probably seen
main inelastic decay
dominant
small
small positive
small negative
large
large positive
large negative
positive
negative
none
```

'`digits`' may be of the following form:

```
                          ___
                         |   |
  ------------------->| 0 |-------------------->
        ^            |    |___|        ^       |
        |            |      ___        |       |
        |            |     |   |       |       |
        |            |---->| 1 |---->|       |
        |            |     |___|       |       |
        |            |      ___        |       |
        |            |     |   |       |       |
        |            |---->| 2 |---->|       |
        |            |     |___|       |       |
        |            |      ___        |       |
        |            |     |   |       |       |
        |            |---->| 3 |---->|       |
        |            |     |___|       |       |
        |            |      ___        |       |
        |            |     |   |       |       |
        |            |---->| 4 |---->|       |
        |            |     |___|       |       |
        |            |      ___        |       |
        |            |     |   |       |       |
        |            |---->| 5 |---->|       |
        |            |     |___|       |       |
        |            |      ___        |       |
        |            |     |   |       |       |
        |            |---->| 6 |---->|       |
        |            |     |___|       |       |
        |            |      ___        |       |
        |            |     |   |       |       |
        |            |---->| 7 |---->|       |
        |            |     |___|       |       |
        |            |      ___        |       |
        |            |     |   |       |       |
        |            |---->| 8 |---->|       |
        |            |     |___|       |       |
        |            |      ___        |       |
        |            |     |   |       |       |
        |            |---->| 9 |---->|       |
        |            |     |___|               |
        |                                       |
        |----------------------------------
```

'unsigned_float' may be of the following form:

```
          ___      _____
         |   |    |        |
   ----->| . |--->| digits |-------------------------------------->
      |  |___|    |_____|                                  ^
      |                                                       |
      |                                                       |
      |        _____                                       |
      |       |        |                                      |
      --->| digits |---------------------------------->|
          |_____|  |                                       |
                      |      ___                              |
                      |     |   |                             |
                      ---->| . |---------------------------->|
                           |___|   |                         |
                                   |      _____            |
                                   |     |        |           |
                                   ---->| digits |---------->|
                                        |_____|
```

'float' may be of the following form:

```
               ___
              |   |
          --->| + |----
          |   |___|   |
          |           v       _____
          |                  |               |
   ----------------------------->| unsigned_float |----------->
          |   ___      ^        |_____|
          |  |   |   |
          --->| - |----
             |___|
```
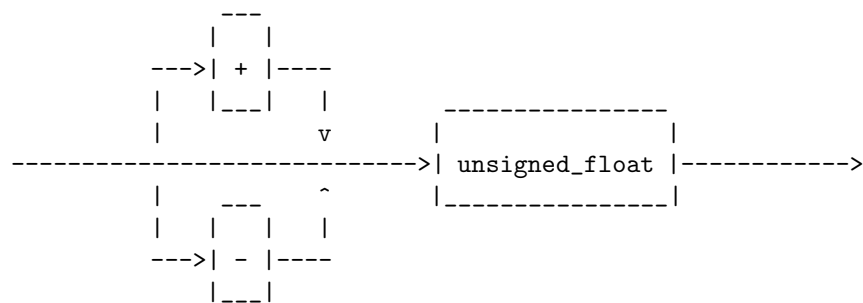
'`total error`,' '`statistical error`,' and '`systematic error`' may be of the following form:

```
              ____        _____
             |    |      |                |
     ------->| +- |--->| unsigned_float |------------------------------------------------>
      |      |____|      |_____|                                          ^
      |       ___        _____         ___        _____        |
      |      |   |      |                |       |   |      |                |       |
      |--->| + |---->| unsigned_float |--->| - |--->| unsigned_float |--->|
      |      |___|      |_____|       |___|      |_____|       |
      |       ___        _____         ___        _____        |
      |      |   |      |                |       |   |      |                |       |
      |--->| - |---->| unsigned_float |--->| + |--->| unsigned_float |--->|
             |___|      |_____|       |___|      |_____|
```
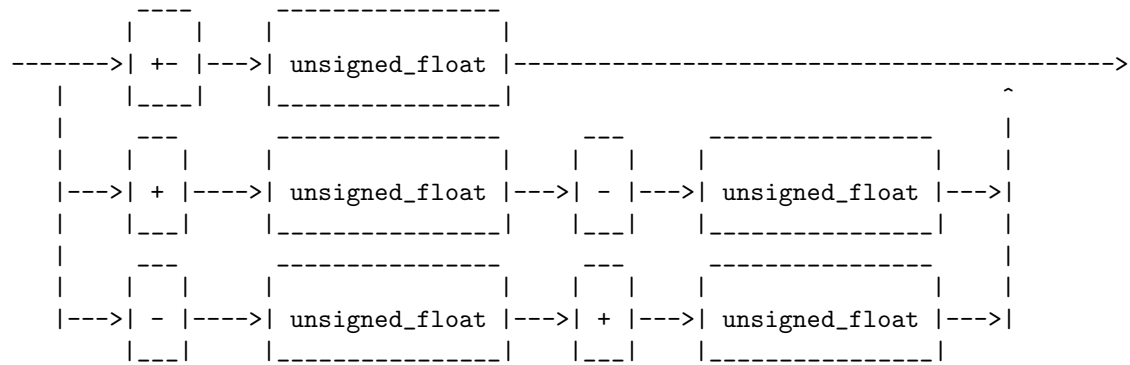
'`errored_value`' may be of the following form:

```
                            _____
            _____        |       |
           |       |       | total |
     ----->| float |------>| error |-------------------------------->
           |_____|  |    |_____|                           ^
                      |      _____        _____   |
                      |     |             |      |           |  |
                      |     | statistical |      | systematic |  |
                      |---->| error       |--->| error      |----
                            |_____|      |_____|
```
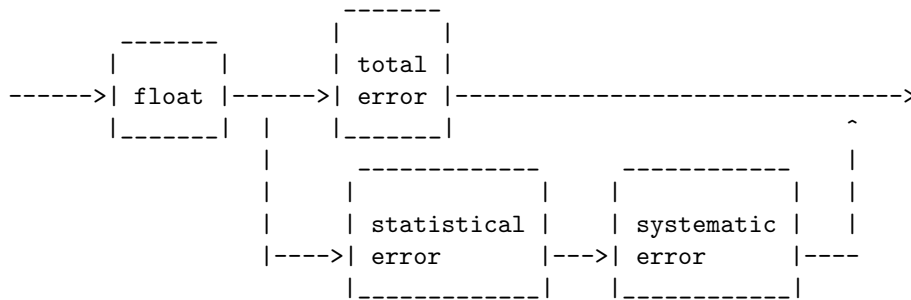
'`power`' may be of the following form:

```
                     ___
                    |   |
               ----->| + |------
          ____ |    |___|   |
         |    ||              |         _____
   ----->| ** |-------------------------->| digits |------>
         |____| |              ^         |_____|
                |       ___     |
                |      |   |    |
               ----->| - |------
                      |___|
```
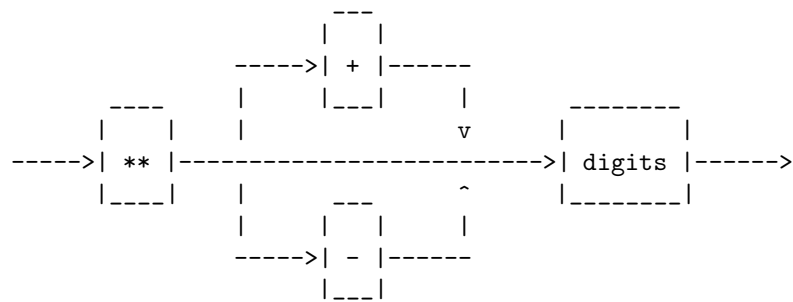
'`power10`' may be of the following form:

```
                     ___
                    |   |
               ----->| + |------
          ___  |    |___|   |
         |   | |              |         _____
   ----->| E |-------------------------->| digits |----->
         |___| |              ^         |_____|
                |       ___     |
                |      |   |    |
               ----->| - |------
                      |___|
```

'`value`' may be of the following form:

```
                  _____
                 |       |
   ------------>| float |------------------------------------------------->
        |       |_____|           |                              ^
        |                            |                _____       |
        |                            |               |       |      |
        |                            |-------------------->| power |----->|
        |                            |               |_____|      |
        |                            |                               |
        |                            |                _____      |
        |                            |               |         |     |
        |                            -------------------->| power10 |--->|
        |                                     ^         |_____|     |
        |                                     |                         |
        |    ___    _____   ___      |                         |
        |   |   |  |              | |   | |    |                         |
        |-->| ( |--->| errored_value |--->| ) |----                    |
        |   |___|  |_____| |___|                              |
        |                                                               |
        |          _____                                      |
        |         |              |                                      |
        |---------->| errored_value |----------------------------->|
                   |_____|
```
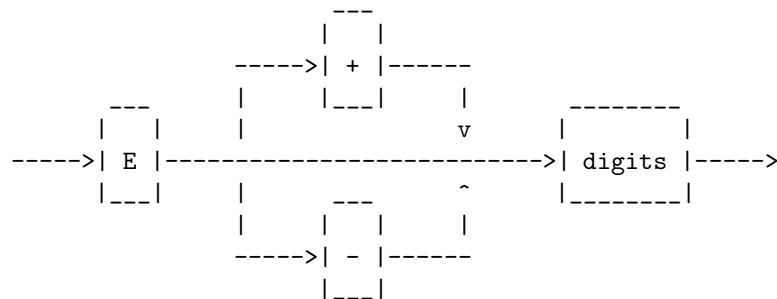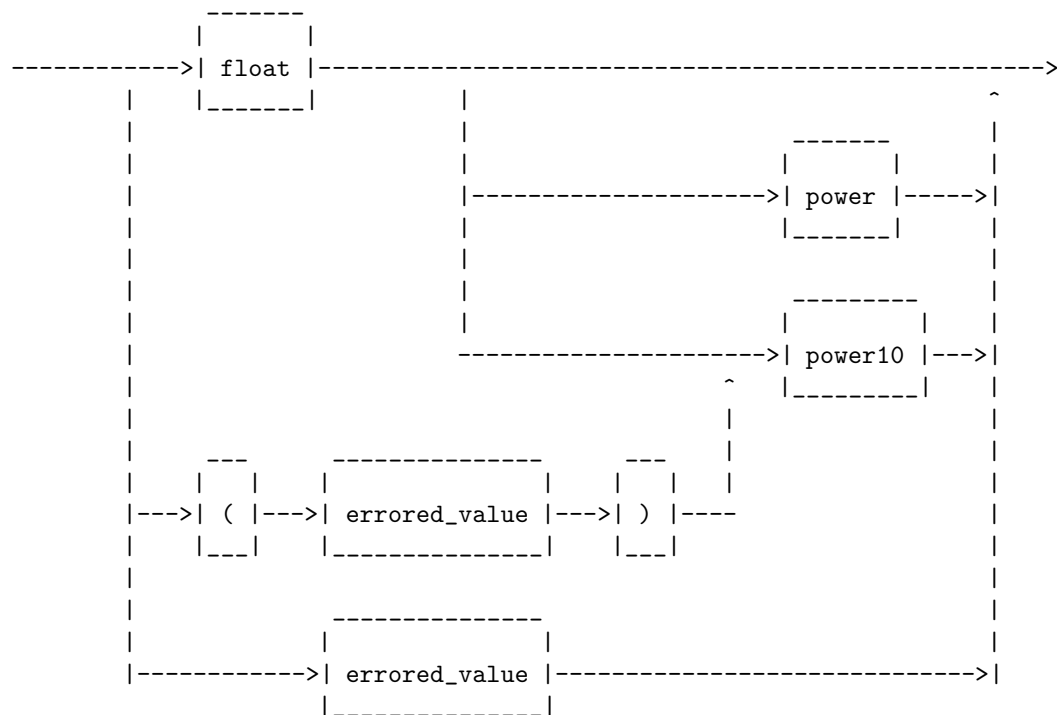
'`approx_value`' may be of the following form:

```
              ____
             |    |
      ----> |  ~  |-------
             |____|        |          _____
             |             v         |       |
------|                   ---->| value |-------->
             |     ____        ^         |_____|
             |    |    |       |
      ----> | ~~ |-------
                  |____|
```
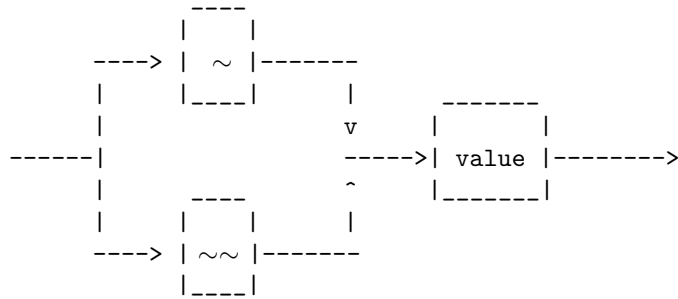
where '$\sim$' means roughly equal to or of the order of a single value, and
where '$\sim\sim$' means fairly approximately equal to a single value.

'`range-1`' may be of the following form:

```
              ____               _____
             |    |             |       |
----------->| <= |---------->| value |---------->
             |____|        ^         |_____|
             |             |
             |     ____        |
             |    |    |       |
             |---->| >= |----->|
             |    |____|       |
             |             |
             |     ____        |
             |    |    |       |
             |---->| <  |----->|
             |    |____|       |
             |             |
             |     ____        |
             |    |    |       |
             |---->| >  |----->|
                  |____|
```
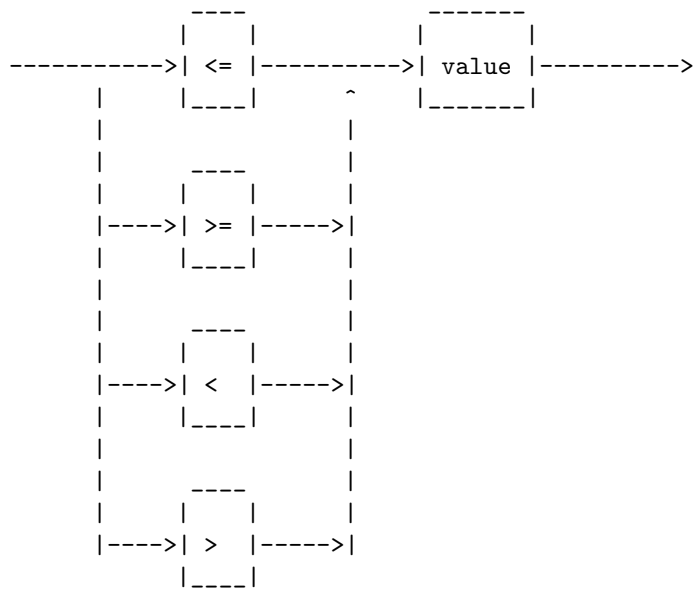
'range-2' may be of the following form:

```
          _____        _____          ____           _____          _____
         |       |      |       |        |    |         |       |        |       |
  ---->| value |--->| blank |----->| TO |----->| blank |---->| value |------------------------------------------------------------>
         |_____|      |_____| |  |____|   ^  |_____|        |_____|   |                                                      ^
                                   |    ____      |                            |                                                      |
                                   |   |    |     |                            V                                                      |
                                   |-->| to |---|                           _____                                                  |
                                       |____|                              |       |                                                 |
                                                                           | blank |                                                 |
                                                                           |       |                                                 |
                                                                            _____                                                  |
                                                                              |                                                      |
                                                                              |                                                      |
                                                              ---------->|       _____                                         |
                                                                         |      |           |                                        |
                                                                         |--->|  EXCLUSIVE |-------------->|                          |
                                                                         |      |_____|                                        |
                                                                         |       _____                               |
                                                                         |      |                    |                               |
                                                                         |--->|  LOWER BOUND EXCLUDED |--->|                         |
                                                                         |      |_____|                              |
                                                                         |       _____                               |
                                                                         |      |                    |                               |
                                                                         |--->|  UPPER BOUND EXCLUDED |--->|                         |
                                                                                |_____|
```
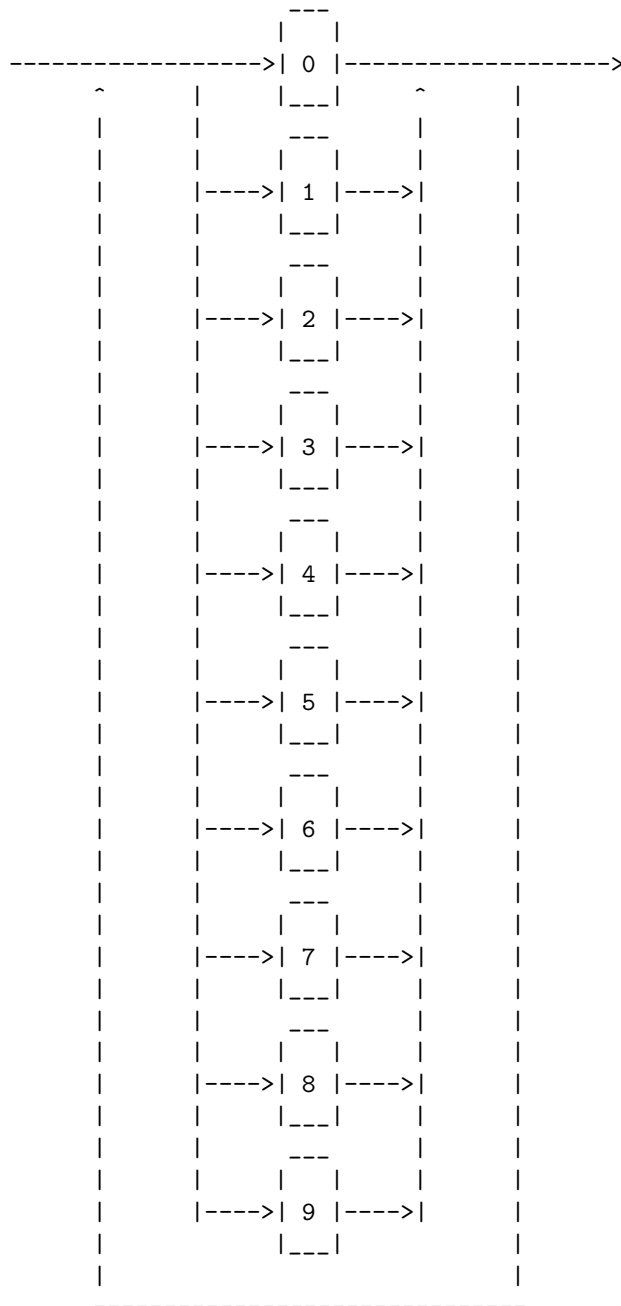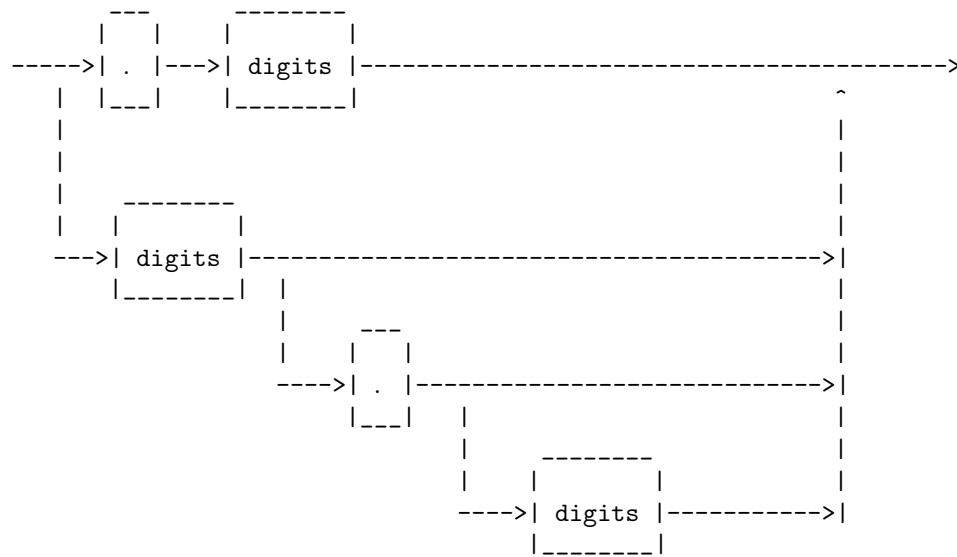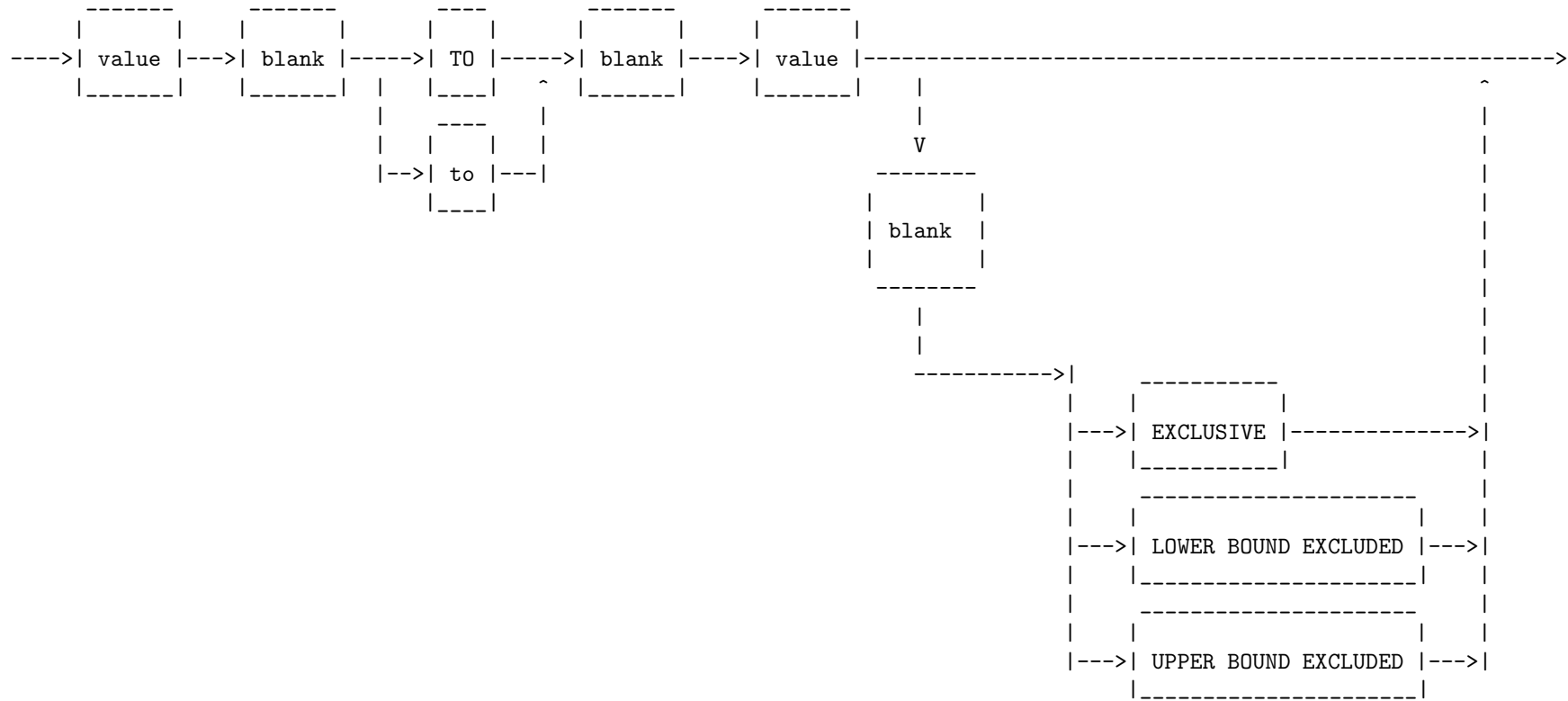
'range-3' may be of the following form:

```
          _____        _____          ____           _____          _____          _____          ____           _____          _____
         |       |      |       |        |    |         |       |        |       |        |       |        |    |         |       |        |       |
  ---->| value |--->| blank |----->| TO |----->| blank |--->| value |--->| blank |----->| TO |----->| blank |--->| value |--->
         |_____|      |_____| |  |____|   ^  |_____|        |_____|        |_____| |  |____|   ^  |_____|        |_____|
                                   |    ____      |                                          |    ____      |
                                   |   |    |     |                                          |   |    |     |
                                   |-->| to |---|                                           |-->| to |---|
                                       |____|                                                   |____|
```
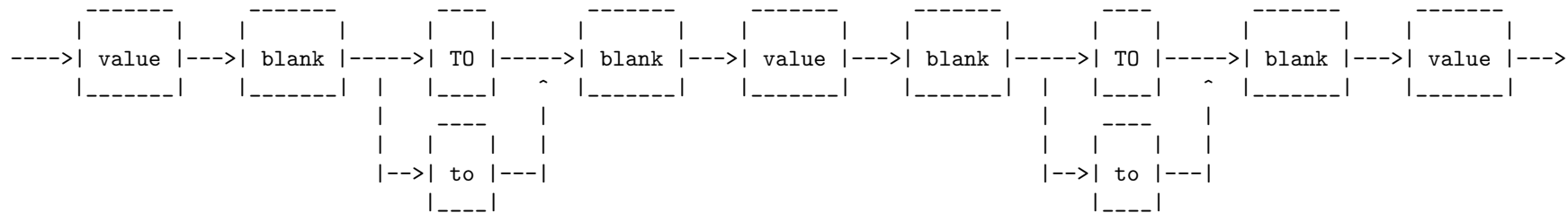
‘`br_adjust`’ may be of the following form:

```
       _____                _____                        ___     _____
      |            |              |           |                      |   |   |          |
----->| br_adjust: |-------->| br_value |------------------->| ; |------>| daughter |------------------>
      |_____|              |_____|                    ^   |___|   |_____|              |
                                                                 |                                      |
                                                                 |                                      V
                                                                 |<----( optional for additional daughters )----
```
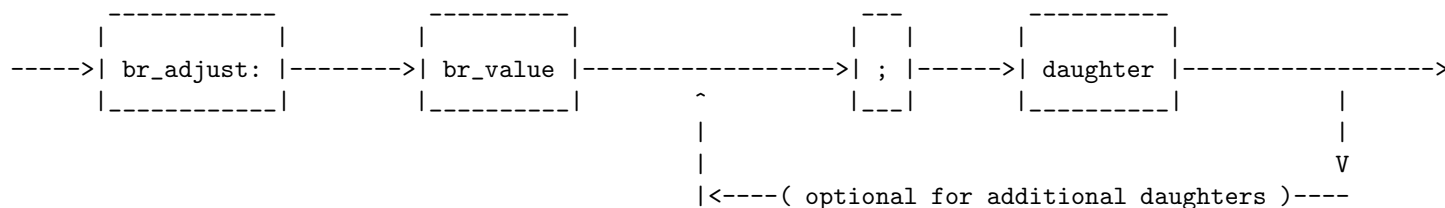
where ‘`daughter`’ may be of the following form:

```
        ___     ___        _____        ___     _____      _____    _____
       |   |   |   |      |          |      |   |   |          |    |       |   |            |
-------->| * |---->| , |------->| br_value |---->| , |--->| particle |-->| blank |-->| decay mode |------------>
       |   |___|  ^  |___|    |          |  ^  |___| |   | code     |   |_____|   | designator |   ^
       |   ___    |           |   _____   |       |   |_____|               |_____|    |
       |  |   |   |           |  |       |  |       |                  _____                        |
       |-->| / |->|           |-->| ADJUST |--->|       |                 |      |                        |
          |___|               |_____|      |       |-------------->| node |-------------------->|
                                                                         |_____|
```
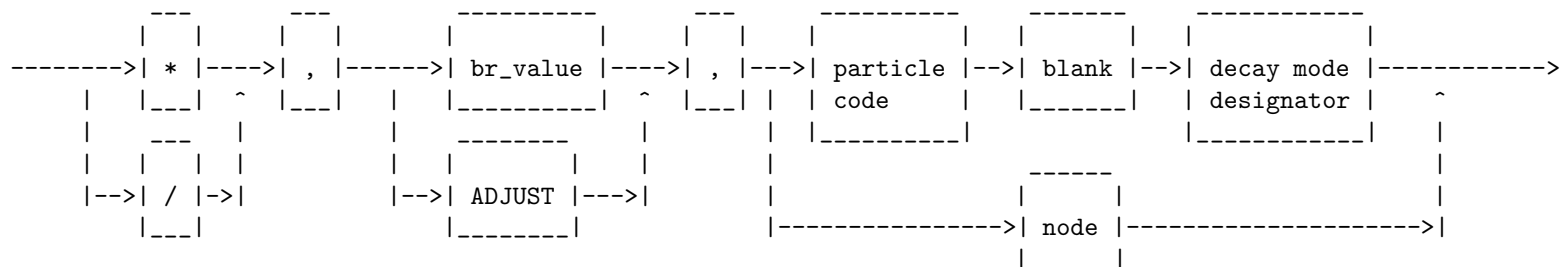
and where ‘`br_value`’ may be of the following form:

```
              _____
             |                |
-------------->| errored_value |------------->
             |  |_____|  ^
             |   _____          |
             |  |       |         |
             |-->| value |-------->|
             |  |_____|          |
             |   _____    |
             |  |              |   |
             |-->| approx_value |-->|
             |  |_____|   |
             |   _____          |
             |  |         |         |
             |-->| range-1 |------->|
                |_____|
```
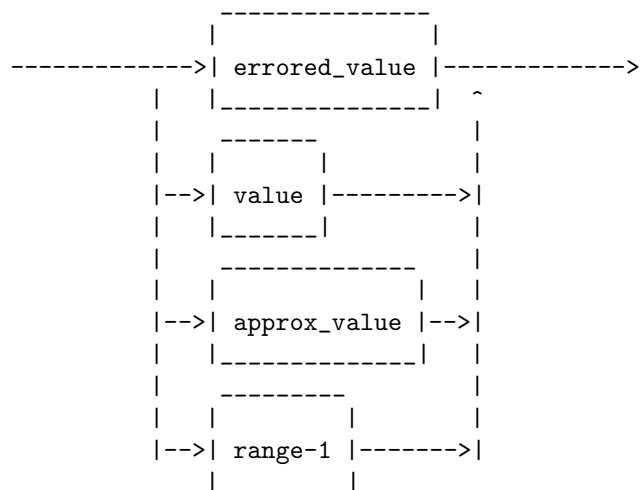
For a more complete description of ‘`br_adjust`,’ see Particle Data Group Notes PDG-94-08.

'`dep_meas`' may be of the following form:

```
       _____        _____       ___       _____       _____       _____
      |           |      |                |      |   |     |           |     |           |     |           |
----->| dep_meas: |--->| errored value |----->| , |--->| dependent |--->| dependent |--->| dependent |-------->
      |_____|      |_____|  ^  |___|     | slope     |     | value     |     | node      |    |
                                             |            |_____|     |_____|     |_____|    |
                                             |                                                                 |
                                             |                                                                 V
                                             |<---------( optional for additional dependent nodes )----------
```

For a more complete description of '`dep_meas`' see Particle Data Group Notes PDG-96-01.

'`multiple_values`' may be of the following form:

```
       _____        _____        ____        _____        _____
      |       |      |       |      |    |      |       |      |       |
----->| value |----->| blank |------>| OR |------>| blank |----->| value |----->
      |_____|      |_____|   |  |____|  ^   |_____|      |_____|
                                 |    ____      |
                                 |   |    |     |
                                 |-->| or |---|
                                     |____|
```