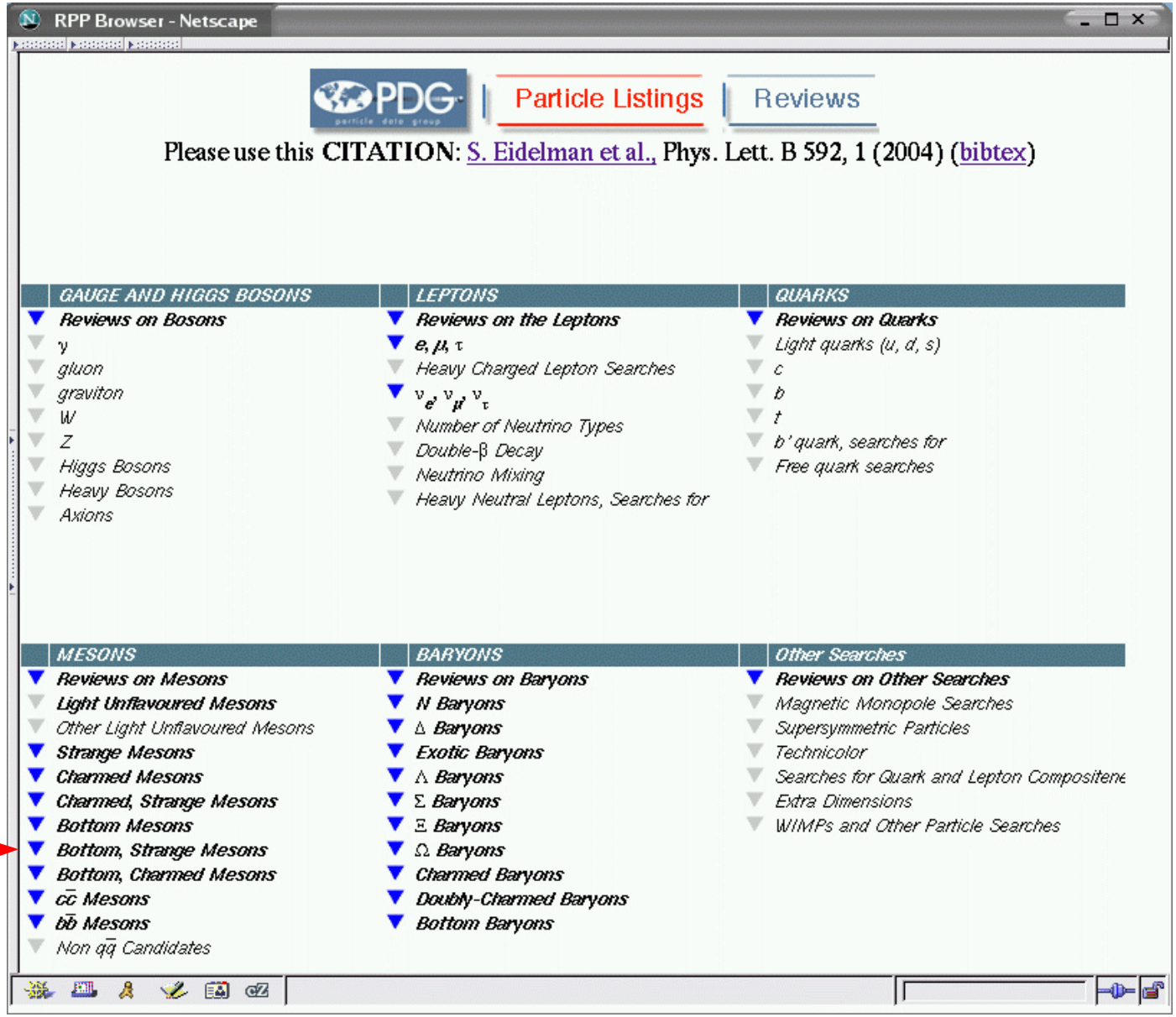
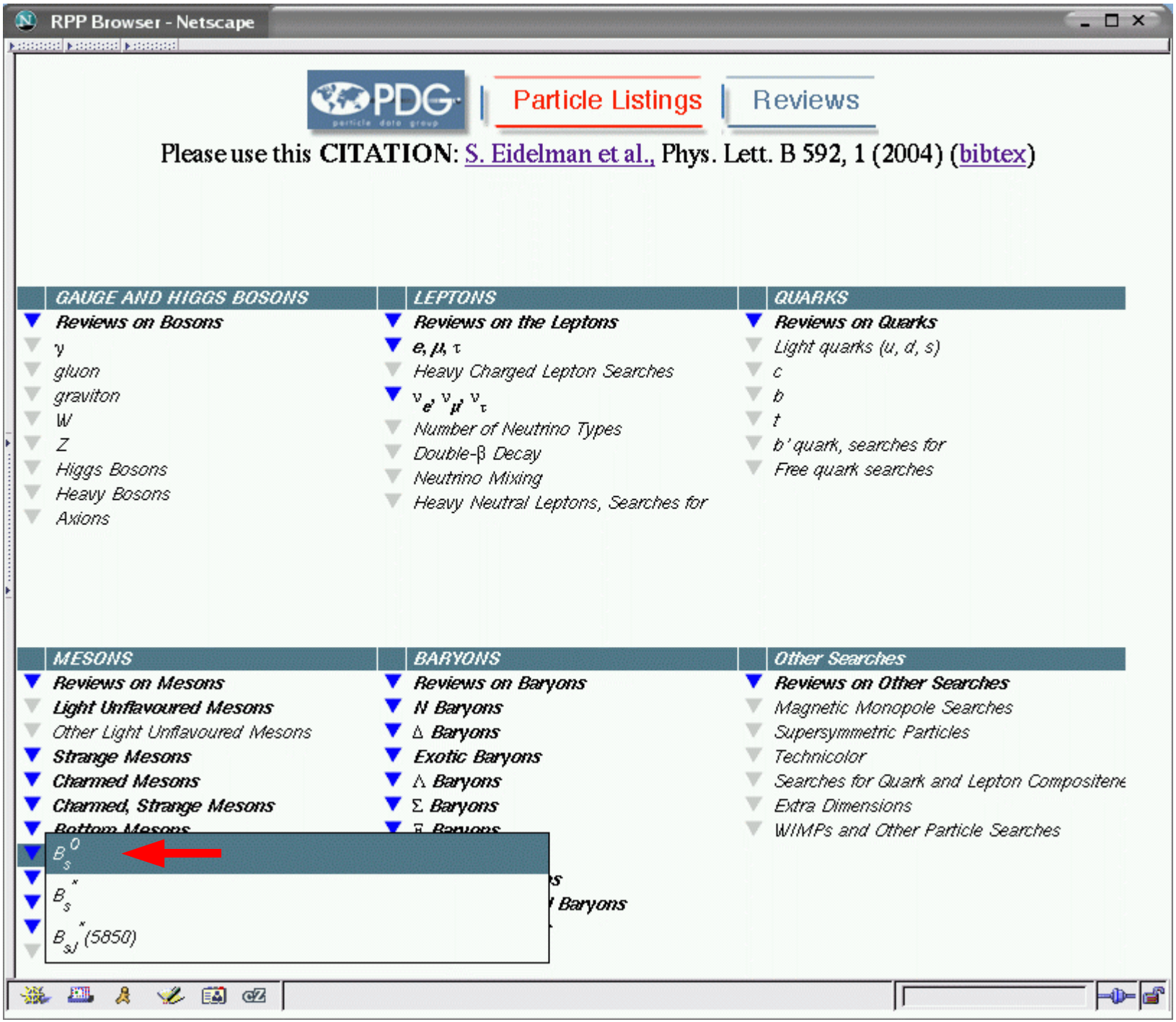
Public Interface

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Particle Listings
Reviews
Please use this CITATION: S. Eidelman et al., Phys. Lett. B 592, 1 (2004) (bibtex)
GAUGE AND HIGGS BOSONS
Reviews on Bosons
γ
gluon
graviton
W
Z
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Heavy Bosons
Axions
LEPTONS
Reviews on the Leptons
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Number of Neutrino Types
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Charmed Mesons
Charmed, Strange Mesons
Bottom Mesons
B_s^0
B_s^*
B_sJ^*(5850)
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Λ Baryons
Σ Baryons
Other Searches
Reviews on Other Searches
Magnetic Monopole Searches
Supersymmetric Particles
Technicolor
Searches for Quark and Lepton Compositene
Extra Dimensions
WIMPs and Other Particle Searches

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PDG | Particle Listings | Reviews

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B_s^0 $I(J^P) = 0(0^-)$

back to Contents

I, *J*, *P* need confirmation. Quantum numbers shown are quark-model predictions.

Mass $m_{B_s^0}$ = 5369.6 ± 2.4 MeV

Mean life τ = 1.461 ± 0.057 × 10^{-12} s

$c\tau$ = 438 μm

B_s^0-$\bar{B}_s^0$ mixing parameters

$\Delta m_{B_s^0} = m_{B_{sH}^0} - m_{B_{sL}^0}$ >14.4 × 10^{12} $\hbar$ s^{-1}, CL=95%

>94.8 × 10^{-10} MeV, CL=95%

$x_s = \Delta m_{B_s^0}/\Gamma_{B_s^0}$ >20.6, CL=95%

χ_s >0.49883, CL=95%

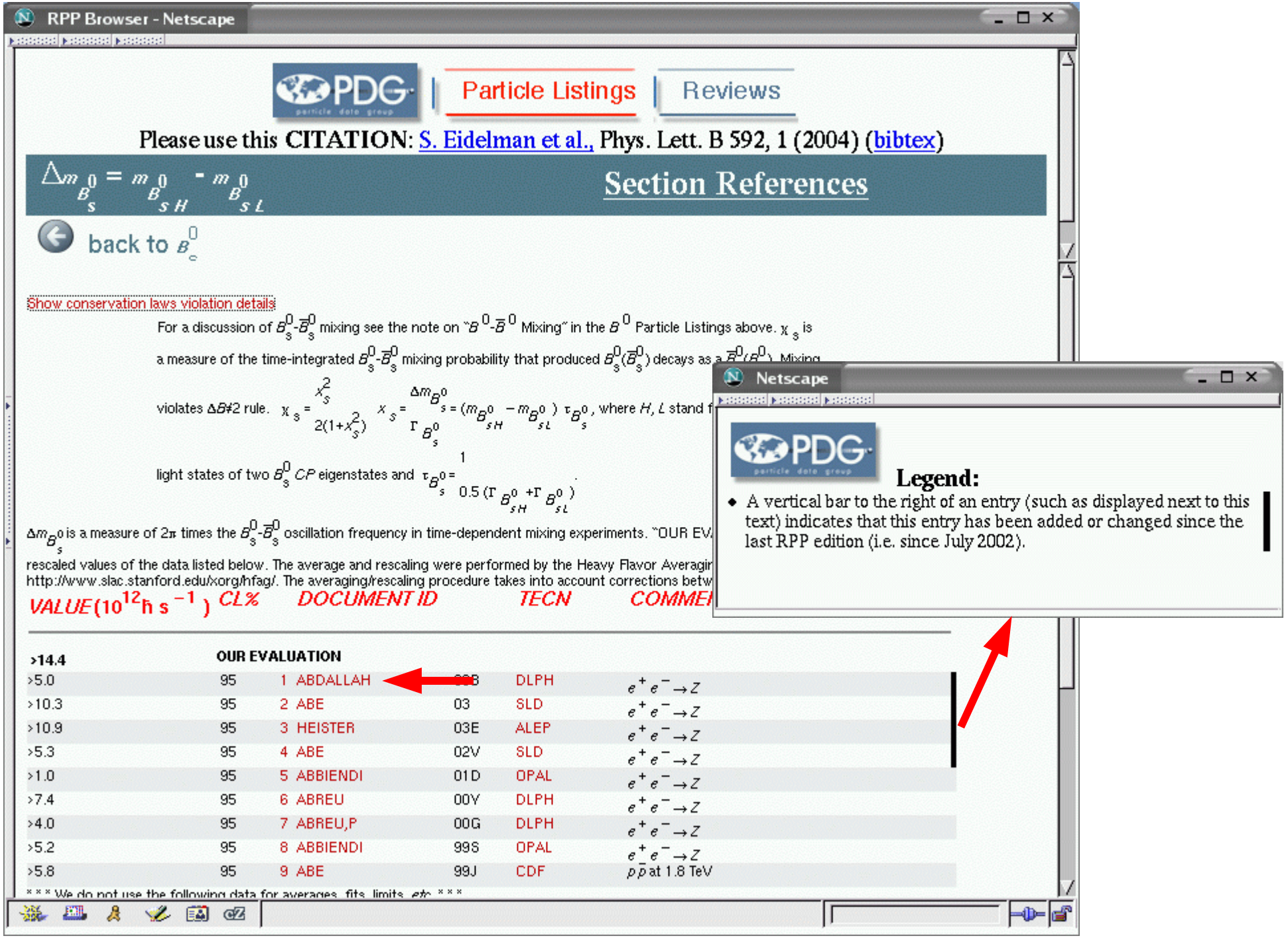
These branching fractions all scale with B($\bar{b} \to B_s^0$), the LEP B_s^0 production fraction. The first four were evaluated using B($\bar{b} \to B_s^0$) = (10.7 ± 1.4)% and the rest assume B($\bar{b} \to B_s^0$) = 12%.

The branching fraction B($B_s^0 \to D_s^- \ell^+ \nu_\ell$ anything) is not a pure measurement since the measured product branching fraction B($\bar{b} \to B_s^0$) × B($B_s^0 \to D_s^- \ell^+ \nu_\ell$ anything) was used to determine B($\bar{b} \to B_s^0$), as described in the note on "Production and Decay of *b*-Flavored Hadrons."

For inclusive branching fractions, *e.g.*, $B \to D^\pm$ anything, the values usually are multiplicities, not branching fractions. They can be greater than one.

B_s^0 DECAY MODES		Fraction (Γ_i/Γ)	Confidence level	p (MeV/*c*)
Γ_1	D_s^- anything	(94 ± 30) × 10^{-2}		-
Γ_2	$D_s^- \ell^+ \nu_\ell$ anything	[a] (7.9 ± 2.4) × 10^{-2}		-
Γ_3	$D_s^- \pi^+$	< 13 × 10^{-2}		2322

http://pdg0.lbl.gov:8080/rpp/popu...ata.brl?nodein=S086D&clin=bb0000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Reviews
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$\Delta m_{B_s^0} = m_{B_{sH}^0} - m_{B_{sL}^0}$
Section References
back to B_c^0
Show conservation laws violation details
For a discussion of B_s^0-$\bar{B}_s^0$ mixing see the note on "B^0-$\bar{B}^0$ Mixing" in the B^0 Particle Listings above. χ_s is
a measure of the time-integrated B_s^0-$\bar{B}_s^0$ mixing probability that produced B_s^0($\bar{B}_s^0$) decays as a $\bar{B}_s^0$(B_s^0). Mixing
violates $\Delta B \neq 2$ rule. $\chi_s = \frac{x_s^2}{2(1+x_s^2)}$ $x_s = \frac{\Delta m_{B_s^0}}{\Gamma_{B_s^0}} = (m_{B_{sH}^0} - m_{B_{sL}^0})\,\tau_{B_s^0}$, where H, L stand f
light states of two B_s^0 CP eigenstates and $\tau_{B_s^0} = \frac{1}{0.5\,(\Gamma_{B_{sH}^0} + \Gamma_{B_{sL}^0})}$.
$\Delta m_{B_s^0}$ is a measure of 2π times the B_s^0-$\bar{B}_s^0$ oscillation frequency in time-dependent mixing experiments. "OUR EV
rescaled values of the data listed below. The average and rescaling were performed by the Heavy Flavor Averagin
http://www.slac.stanford.edu/xorg/hfag/. The averaging/rescaling procedure takes into account corrections betw
VALUE ($10^{12}\hbar\,s^{-1}$) CL% DOCUMENT ID TECN COMME
>14.4 OUR EVALUATION
>5.0 95 1 ABDALLAH 03B DLPH $e^+e^- \to Z$
>10.3 95 2 ABE 03 SLD $e^+e^- \to Z$
>10.9 95 3 HEISTER 03E ALEP $e^+e^- \to Z$
>5.3 95 4 ABE 02V SLD $e^+e^- \to Z$
>1.0 95 5 ABBIENDI 01D OPAL $e^+e^- \to Z$
>7.4 95 6 ABREU 00Y DLPH $e^+e^- \to Z$
>4.0 95 7 ABREU,P 00G DLPH $e^+e^- \to Z$
>5.2 95 8 ABBIENDI 99S OPAL $e^+e^- \to Z$
>5.8 95 9 ABE 99J CDF $p\bar{p}$ at 1.8 TeV
* * * We do not use the following data for averages, fits, limits, etc. * * *
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Paper **1** to **1** of **1**

SEARCH FOR B(S)0 - ANTI-B(S)0 OSCILLATIONS AND A MEASUREMENT OF B(D)0 - ANTI-B(D)0 OSCILLATIONS USING EVENTS WITH AN INCLUSIVELY RECONSTRUCTED VERTEX.

By DELPHI Collaboration (J. Abdallah *et al.*). CERN-EP-2002-078, Oct 2002. 34pp.

Published in **Eur.Phys.J.C28:155-173,2003**

e-Print Archive: **hep-ex/0303032**

References | LaTeX(US) | LaTeX(EU) | Harvmac | BibTeX | Keywords | Cited 7 times

Abstract and Postscript and PDF from arXiv.org (mirrors: au br cn de es fr il in it jp kr ru tw uk za aps lanl)

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EXP CERN-LEP-DELPHI

FULL LIST OF MEASUREMENTS

ABDALLAH 2003B The European Physical Journal **C28** (2003) 155

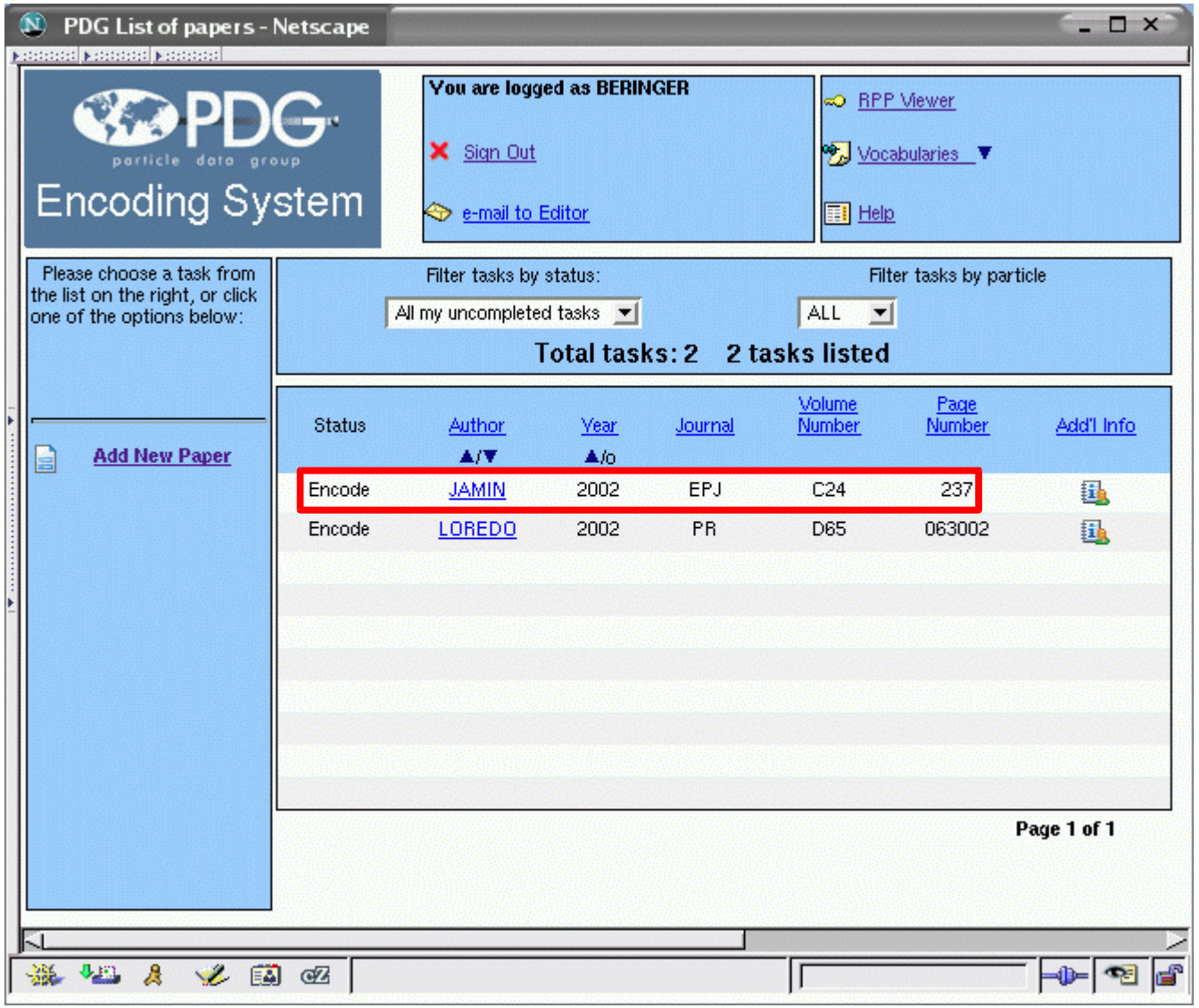
Search for $B_s^0 \leftrightarrow \bar{B}_s^0$ Oscillations and a measurement of $B_d^0 \leftrightarrow \bar{B}_d^0$ Oscillations using Events with an Inclusively Reconstructed Vertex

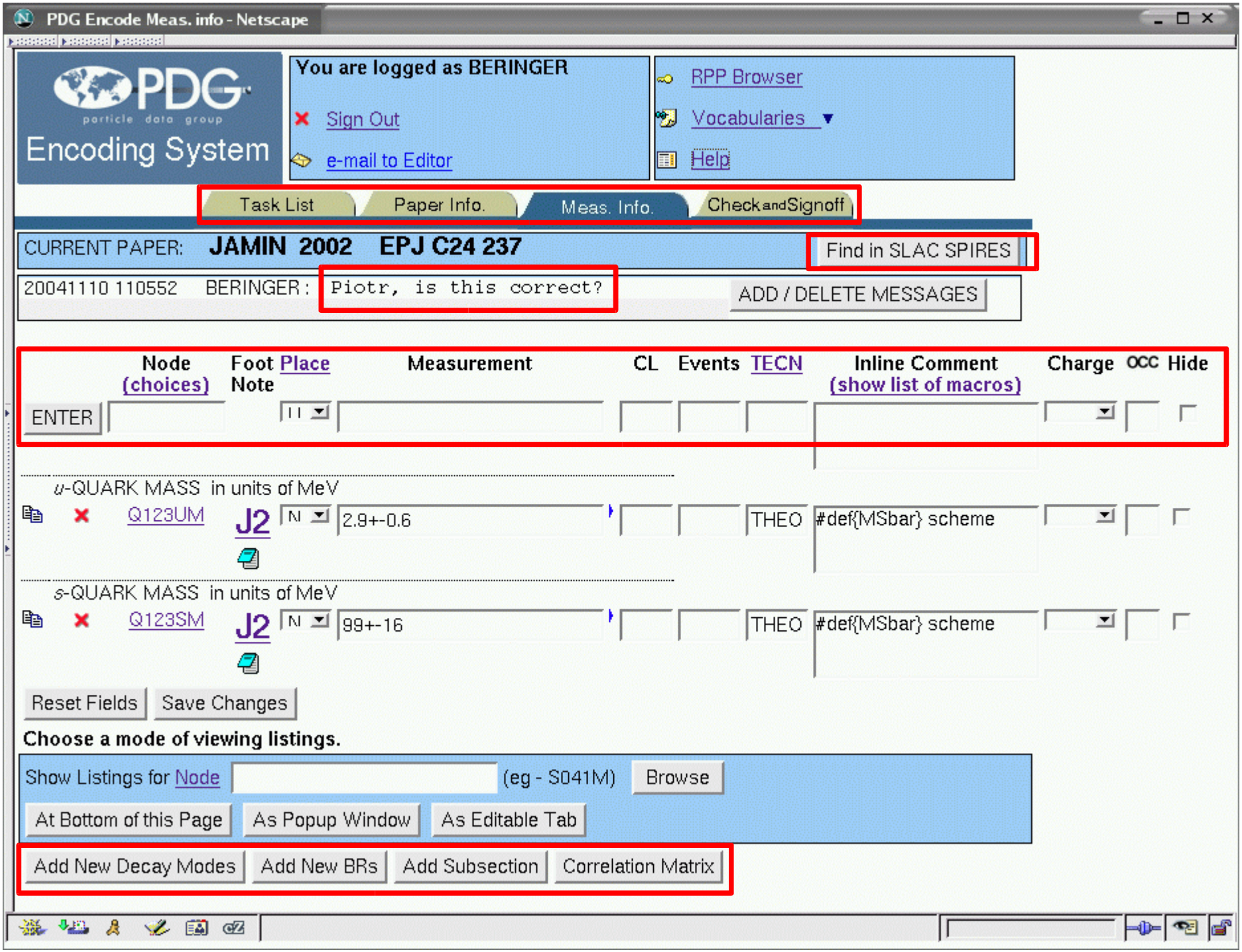
DELPHI Collab.

CERN-EP-2002-078, hep-ex/0303032

	Measurement			(Unit)	Particle (Section)	Observable	
limit	<0.18				B^0	$\lvert\Delta\Gamma_{B_d^0}\rvert/\Gamma_{B_d^0}$	1
used	0.531	± 0.025	± 0.007	($10^{12}\hbar s^{-1}$)	B^0	$\Delta m_{B^0} = m_{B_H^0} - m_{B_L^0}$	2
used	>5.0			($10^{12}\hbar s^{-1}$)	B_s^0	$\Delta m_{B_s^0} = m_{B_{sH}^0} - m_{B_{sL}^0}$	3

Encoder Interface

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CL
Events
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Inline Comment (show list of macros)
Charge
OCC
Hide
ENTER
u-QUARK MASS in units of MeV
Q123UM
J2
N
2.9+-0.6
THEO
#def{MSbar} scheme
s-QUARK MASS in units of MeV
Q123SM
J2
N
99+-16
THEO
#def{MSbar} scheme
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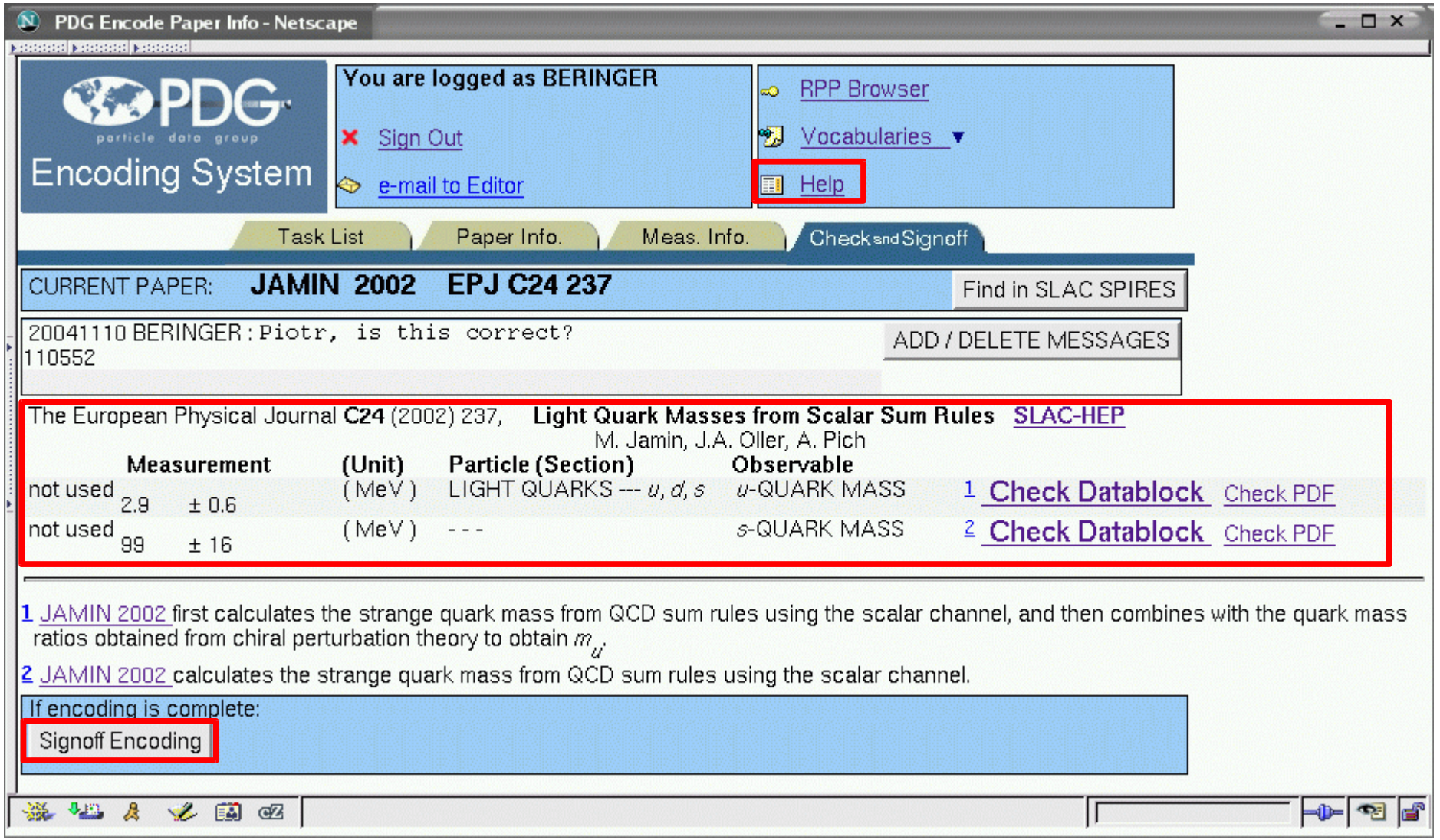
Correlation Matrix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The European Physical Journal C24 (2002) 237, Light Quark Masses from Scalar Sum Rules SLAC-HEP
M. Jamin, J.A. Oller, A. Pich
Measurement (Unit) Particle (Section) Observable
not used 2.9 ± 0.6 (MeV) LIGHT QUARKS --- u, d, s u-QUARK MASS 1 Check Datablock Check PDF
not used 99 ± 16 (MeV) - - - s-QUARK MASS 2 Check Datablock Check PDF
1 JAMIN 2002 first calculates the strange quark mass from QCD sum rules using the scalar channel, and then combines with the quark mass ratios obtained from chiral perturbation theory to obtain $m_{u,d}$.
2 JAMIN 2002 calculates the strange quark mass from QCD sum rules using the scalar channel.
If encoding is complete:
Signoff Encoding

PDG Particle List - Netscape

	MXXX005	LIGHT UNFLAVORED MESONS
	S808	Pseudoscalar meson decay constants
	S008	$\pi^{\pm}$
	S009	π^{0}
	S050	C Invariance Tests in Positronium Decay
	S014	η
	M014	$f_0(600)$
	M009	$\rho(770)$
	M001	$\omega(782)$
	M002	η' (958)
	M003	$f_0(980)$
	M036	$a_0(980)$
	M004	$\phi(1020)$

PDG Journals vocabulary - Netscape

Journal Table

Select first button of journal name:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Abbreviation: | SLAC coden: | Full name: | Hide?

Add journal

reset form

Code :	Slac Code :	Full Name :	Hidden? :
AA	AAEJA	Astronomy and Astrophysics	
ADVP	ADPHA	Advances in Physics	
AFIS	ANFIA	Anales de Fisica	
AJP	AJPIA	American Journal of Physics	
ANP	APNYA	Annals of Physics	
ANPL		Annals of Physics (Leipzig)	

RPP - Help (RedBook) - Netscape

PDG particle data group

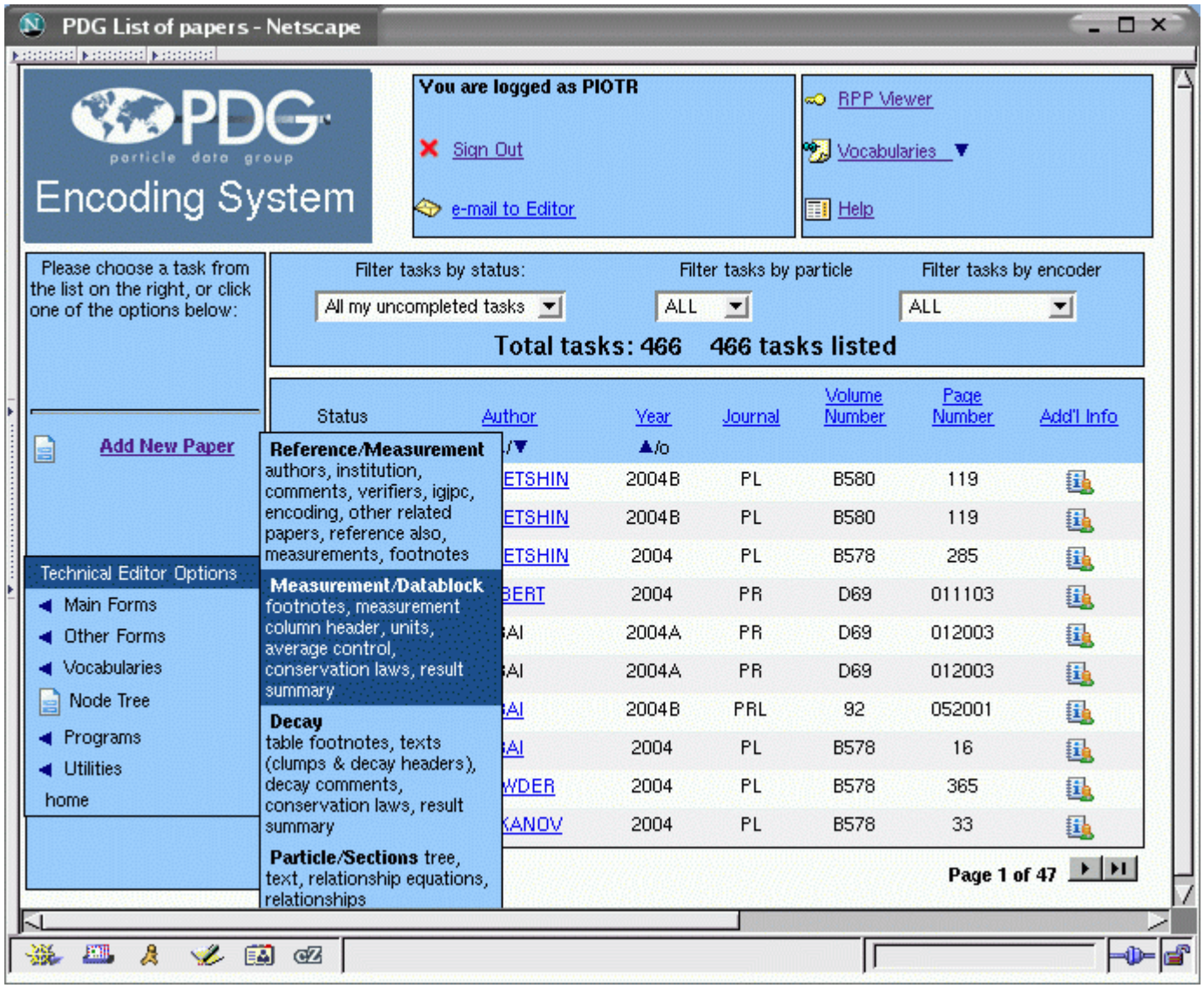
Encoding System

Encoding System

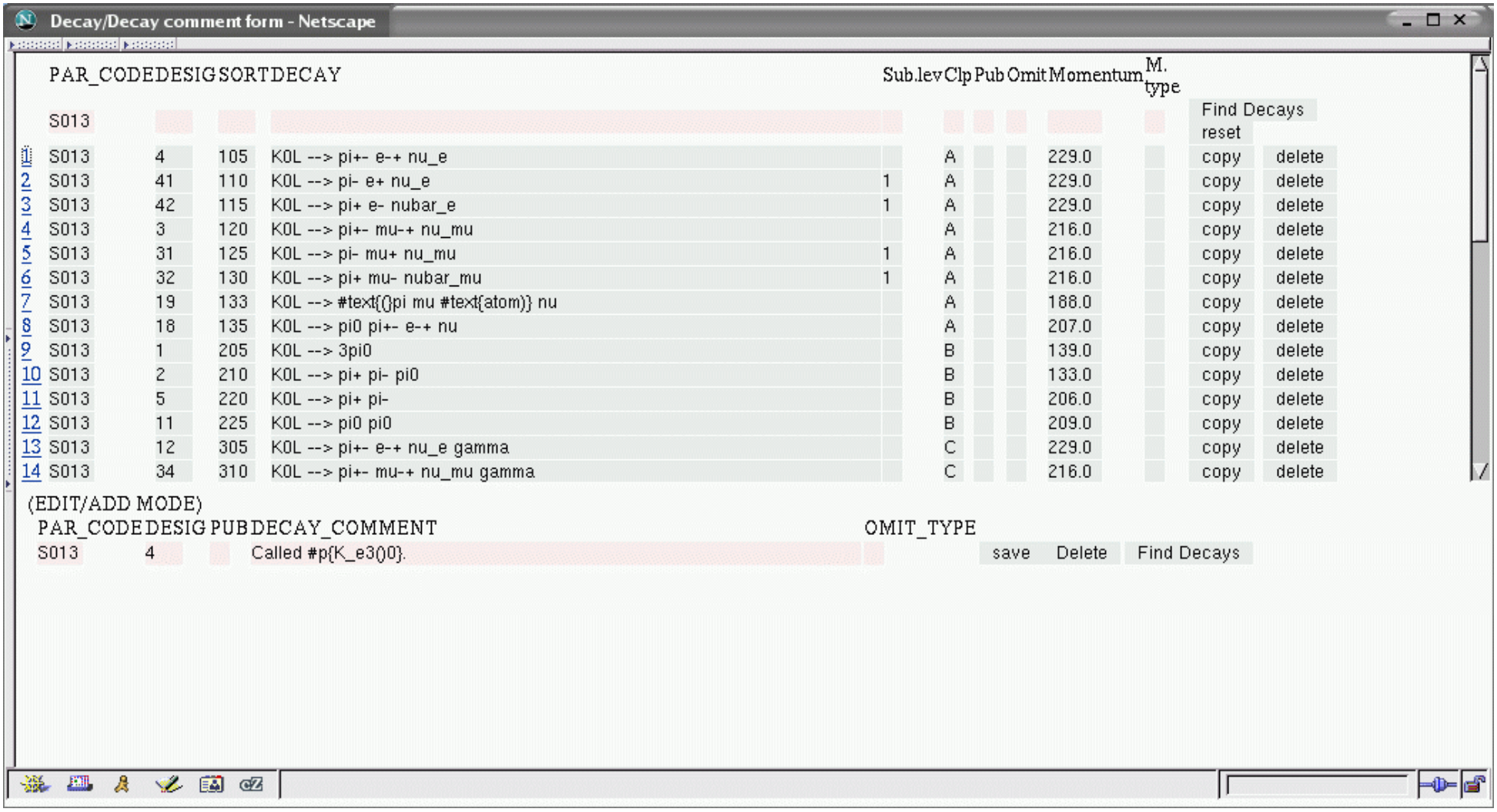
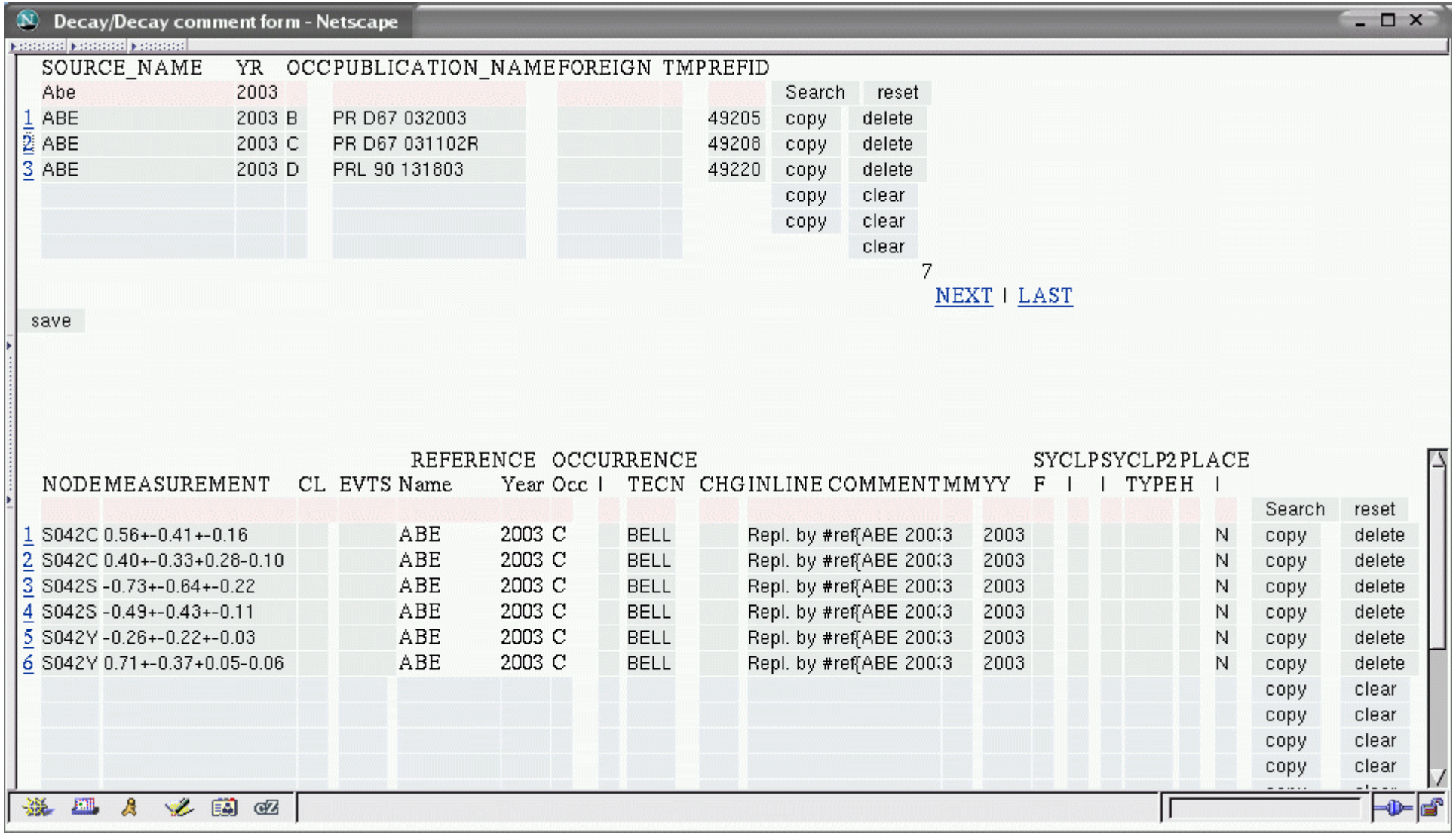
HELP BROWSER RedBook description on TABLES.

- Maintaining Progress of Papers
- Change Bar Date
- Updating Encoding Status
- Tree changes, new particles, sections
  - How to add a new particle
  - How to add a new datablock
  - Building a Tree
  - Assigning responsibility
  - Sample Tree
- References
  - Other Related Papers
  - Reference Also
  - How to kill a reference
- How to change the name of a particle
- Measurements
- Decays
- Footnotes
- Relations
  - Designator Codes
  - Header Text
  - Print Order
  - Inserting a new Branching
- Branching Ratios

Editor Interface



Prototype Decay Form



Prototype Reference/Measurement Form