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Please use this CITATION: S. Eidelman *et al.* (Particle Data Group), Phys. Lett. B **592**, 1 (2004) and 2005 partial update for the 2006 edition

GAUGE & HIGGS BOSONS	LEPTONS	QUARKS
<ul style="list-style-type: none"> ▼ Reviews on Gauge & Higgs Bosons ▼ γ ▼ gluon ▼ graviton ▼ W ▼ Z ▼ Higgs Bosons ▼ Heavy Bosons ▼ Axions 	<ul style="list-style-type: none"> ▼ Reviews on Leptons ▼ e, μ, τ ▼ Heavy Charged Lepton ▼ ν_e, ν_μ, ν_τ ▼ Number of Neutrino Types ▼ Double β-Decay ▼ Neutrino Mixing ▼ Heavy Neutral Leptons 	<ul style="list-style-type: none"> ▼ Reviews on Quarks ▼ Light quarks (u, d, s) ▼ c ▼ b ▼ t ▼ b' ▼ Free quark
MESONS	BARYONS	OTHER SEARCHES
<ul style="list-style-type: none"> ▼ Reviews on Mesons ▼ Light Unflavoured ▼ Further States ▼ Strange ▼ Charmed ▼ Charmed, Strange ▼ Bottom ▼ Bottom, Strange ▼ Bottom, Charmed ▼ $c\bar{c}$ ▼ $b\bar{b}$ ▼ Non $q\bar{q}$ Candidates 	<ul style="list-style-type: none"> ▼ Reviews on Baryons ▼ N Baryons ▼ Δ Baryons ▼ Exotic Baryons ▼ Λ Baryons ▼ Σ Baryons ▼ Ξ Baryons ▼ Ω Baryons ▼ Charmed Baryons ▼ Doubly-Charmed ▼ Bottom Baryons 	<ul style="list-style-type: none"> ▼ Reviews on Other Searches ▼ Magnetic Monopole ▼ Supersymmetric Particles ▼ Technicolor ▼ Quark and Lepton Compositeness ▼ Extra Dimensions ▼ WIMPs
		CONSERVATION LAWS
		<ul style="list-style-type: none"> ▼ Reviews on Conservation Laws ▼ Discrete Space-Time Symm. ▼ Number Conservation Laws

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Introduction

- Traditional form of RPP is the printed book
- PostScript / PDF files have been provided online for many years
 - Does not exploit the possibilities of the web
- **Would like to provide an online interface to RPP that makes finding the information that the public wants much easier**
 - Efficient and easy navigation to the desired information
 - Links to references, papers and related information
 - Searchable (phase 2)
 - Usual presentation (greek symbols, mathematical equations)
- Implemented as a generic “database viewer” working on any RPP database
 - **pdgLive = database viewer with public access, running on a frozen version of the RPP database that corresponds to a published version of RPP**



Challenges (I)

- **Database does not have clean separation between content and formatting**
 - Originally developed for the task of producing the printed RPP book
 - Text snippets stored in database tables use TeX format
 - With PDG specific macros
 - Simple example: many ways to represent the same symbol, e.g. “ B_s^0 ”:
 - $\#p\{B_s()0\}$
 - $\$B_s^0\$$
 - $\$B^0_s\$$
 - Makes rendering in a format not produced via TeX much more difficult
- **Standard web technologies not ideal for greek symbols and equations**
 - Early evaluation found MathML to be not mature and not fast enough
 - Possibility to render math/greek as gif images has its own problems



Challenges (II)

- **Performance** – time it takes until user sees desired page
 - Client-side: time it takes browser to render a complex page
 - Network bandwidth: HTML source of complex pages may be >100kB
 - Server-side: expect pdgLive to be heavily used
- **Browser compatibility**
 - General public uses large variety of different browsers and operating systems
 - Subtle (and not so subtle) differences between different browsers require partly browser-specific code
 - Even different versions of the same browser may behave quite differently
 - Font availability
 - User preferences and settings (font size, display resolution and size, ...)



A Few Words on Design and Implementation

- **Support all major platforms** and common browsers - currently:
 - Linux: Firefox, Mozilla
 - Windows: IE, Firefox
 - Mac: Safari, Firefox
- **HTML and JavaScript**
 - Parser used by viewer can translate most of RPP text into HTML
 - O(100) exceptions manually translated and stored in exception tables
 - Option to render TeX through Mimetex (GPL)
- Parameters (page to be displayed etc.) passed via URL
 - **Pages can be bookmarked** and cached on the server side
- Server-side cache (e.g. Squid)
 - not yet used



Demonstration

<http://pdgLive.lbl.gov>



Summary

- **Obvious improvement** over providing only PostScript/PDF files
 - Allows going from summary information to reading the corresponding papers with just a few mouse clicks
- **pdgLive has gone through several iterations of user testing**
 - Most recently within full PDG collaboration
 - Criticism during last half year primarily related to browser support
- Further improvements (in particular searchability) may require work on database contents/structure
- Viewer makes immediate feedback on production database possible
- Some user comments:
 - “Overall I love the new public interface, great work!”
 - “It sure looks very nice, and the functionality appears excellent.”

