

# 2006 Report

**Recommendations from the 2006 report.**

**Many recommendations have been implemented, and are not listed here.**

**A subset of somewhat problematic issues is shown.**

**“Following our remarks above, we recommend an effort to return to a physical size of the RPP book similar to that of the 2004 and earlier editions, through further streamlining of contents and by using a more compact format and paper quality.”**

**Done. See next slide.**



	Pages	per kg
← RPP08: 1339 pages 2.3 kg	580	
← RPP06: 1231 pages 2.5 kg	490	
← RPP04: 1109 pages 1.65 kg	670	
← RPP02: 974 pages 1.5 kg	650	
← RPP00: 878 pages 1.7 kg	520	
← RPP98: 794 pages 1.5 kg	530	

**We recommend a review of Grand Unified Theory driven group theory, complementing the group theory of unitary symmetries in the hadron sector.**

**I guess we weren't convinced. How does this committee feel?**

**The leptoquark and compositeness minireviews should be complemented, in a style parallel to the technicolor review, by a survey of experimental results on mass limits *etc.* For this purpose, the PDG may want to add experimental physicists to the teams writing these reviews.**

**This was requested of the relevant people but did not happen.**

The review of formulae for cross sections *etc.* **does not include any material on physics beyond the Standard Model.** Including elements of supersymmetric cross sections, and cross sections for processes in theories of extra space dimensions, is naturally suggested by the ongoing analyses of Tevatron data, and by the forthcoming start of LHC operations.

**Implemented ... and also in Kinematics section.**

We support the PDG policy not to expand the RPP into heavy ion physics on a broad scale. However, high temperature QCD is an important and interesting application and testbed of QCD as the fundamental theory of the strong interactions. We therefore repeat our recommendation to add a review article on theoretical and experimental elements of QCD phases and signatures of phase transitions.

**A long debated issue.**

**For this reason, our committee welcomes plans of the LBNL Physics Division to start a “Cosmology Data Group” in order to collect, assess and review cosmology and particle astrophysics data, similar to the unique service that PDG provides to the particle physics community. LBNL would be the most natural center to create such a group, for two reasons:**

- **It would benefit from the unique competence and visibility of the LBNL cosmology group (recognized shortly after this review by the award of the 2006 Nobel Prize for Physics to George Smoot), and**
- **it would benefit from the unique experience and infrastructure developed by the PDG in the past. ...**

**See comments from Subir Sarkar.**

## Computing Upgrade

**Great progress!**

**Hiring someone to replace retirees.**

**Seeking DOE support.**

# Summary

**As presented at DOE Review in  
September**



## Staff for *Review of Particle Physics*

### Physicists:

- 4 half-time (2 FTE)
- 4 retired part-time (1.6 FTE)

### Editor/physicist

### Administrative Assistant

**This is marginally adequate to produce RPP and manage the collaboration.**

**Loss of retirees will leave PDG crippled unless replaced.**

**20-year-old system needs replacement.**

**Will also bring new capabilities for 21<sup>st</sup> century.**

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and manage the collaboration.**

**Loss of retirees will leave PDG crippled  
unless replaced.**

**PDG is in a precarious situation  
in which too much rests in:**

- **The memory of one editor,**
- **Four people who have been  
retired a total of 35 years**

- **PDG is indispensable to HEP**
- **PDG depends on a large number of external physicists managed by a small central team**
- **No further outsourcing is possible**
- **The central team at LBNL is below critical mass**
- **PDG relies on the good will of retirees**

- **Computing upgrade – 2 FTEs for two years**
- **New staff to replace retirees at end of computing upgrade**

“Reviewing the proposal for the PDG is somewhat **akin to reviewing motherhood**. The services that have been provided by this group to the world community of high energy physicists is of **inestimable value**. It is carried out with great competence, which accounts for its wide acceptance.”

“The work of the PDG is **absolutely necessary** for rapid progress of elementary particle physics. Without it, the field would be very fragmented and achieving consensus would be very difficult.”

“They have anticipated needs of HEP scientists extremely well. The data provided by the PDG is the best I know about in all fields. Everybody in HEP makes use of the review and many scientists outside HEP.”

**“It would be hard to imagine HEP without it, and I do not know any other group capable of this effort. The group competence and past accomplishments are excellent.”**

**“The Particle Data Books become "**bibles**" to researchers in particle physics. Without this work, progress would be slower.”**

**... an extremely valuable resource to the particle physics community. This effort is **invaluable** and must be supported. This is constantly being improved and expanded.**

**PDG provides a vital, dynamic, innovative service to the HEP community.**

**The HEP community depends on PDG to provide standards and to assure integrity and quality in summarizing particle physics.**



# The End

# The End