JÜLICH
FORSCHUNGSZENTRUM

Naming Scheme for Hadrons

November 10, 2014 | Christoph Hanhart | IKP and IAS

The PDG Meson Team: unstable mesons

Unstable wrt. strong decay (not π, η, K, D, B)

Person	Affiliation	Responsibilities
Claude Amsler	Bern	Notes
Michael Doser	CERN	Management, notes
Simon Eidelman	Novosibirsk	Literature, notes
Thomas Gutsche	Tübingen	Theory, notes
Christoph Hanhart	Jülich	Theory, notes
Brian Heltsley	Cornell	Notes
Juan-Jose Hernández-Rey	Valencia	Notes
Alberto Masoni	Cagliari	Notes
Sergio Navas	Granada	$c\bar{c}$ fit, notes
Claudia Patrignani	Genova	$c\bar{c}$ fit, notes
Stefan Spanier	Knoxville	Notes
Nils Törnqvist	Helsinki	Theory, notes
Graziano Venanzoni	Frascati	Notes

If you have comments on the listings: Just approach any us

The current Naming Scheme

PDG pages $\rightarrow$ Reviews Tables Plots
$\rightarrow$ Constants, Units, Atomic and Nuclear Properties
$\rightarrow$ Naming Scheme For Hadrons (Roos & Wohl, 2004)

Rules

- As long as quantum numbers unknown use $X(mass)$
- When Quantum numbers known: use Quark Model Name and
  - put quark level, if spectroscopic identity known (e.g. $\Upsilon(2S)$)
  - put mass in brackets otherwise (e.g. $\Upsilon(11020)$)

(Potential) Problems

- Rules tell us to change various names, e.g.
  $X(3872) \to \chi_{c1}(3872)$
  $Y(4260) \to \psi(4260)$

Citation: K.A. Olive *et al.* (Particle Data Group), Chin. Phys. **C38**, 090001 (2014) (URL: http://pdg.lbl.gov)

$f_0(500)$ or σ was $f_0(600)$ $\quad I^G(J^{PC}) = 0^+(0^{++})$

A REVIEW GOES HERE – Check our WWW List of Reviews

- One has to decide when an identity is known, e.g.
  $\psi(2S)$ or $\psi(3686)$
- There is no suggestion for a name for the charged states
  Name should tell quantum numbers ....