



Hadron Spectroscopy Session Introduction

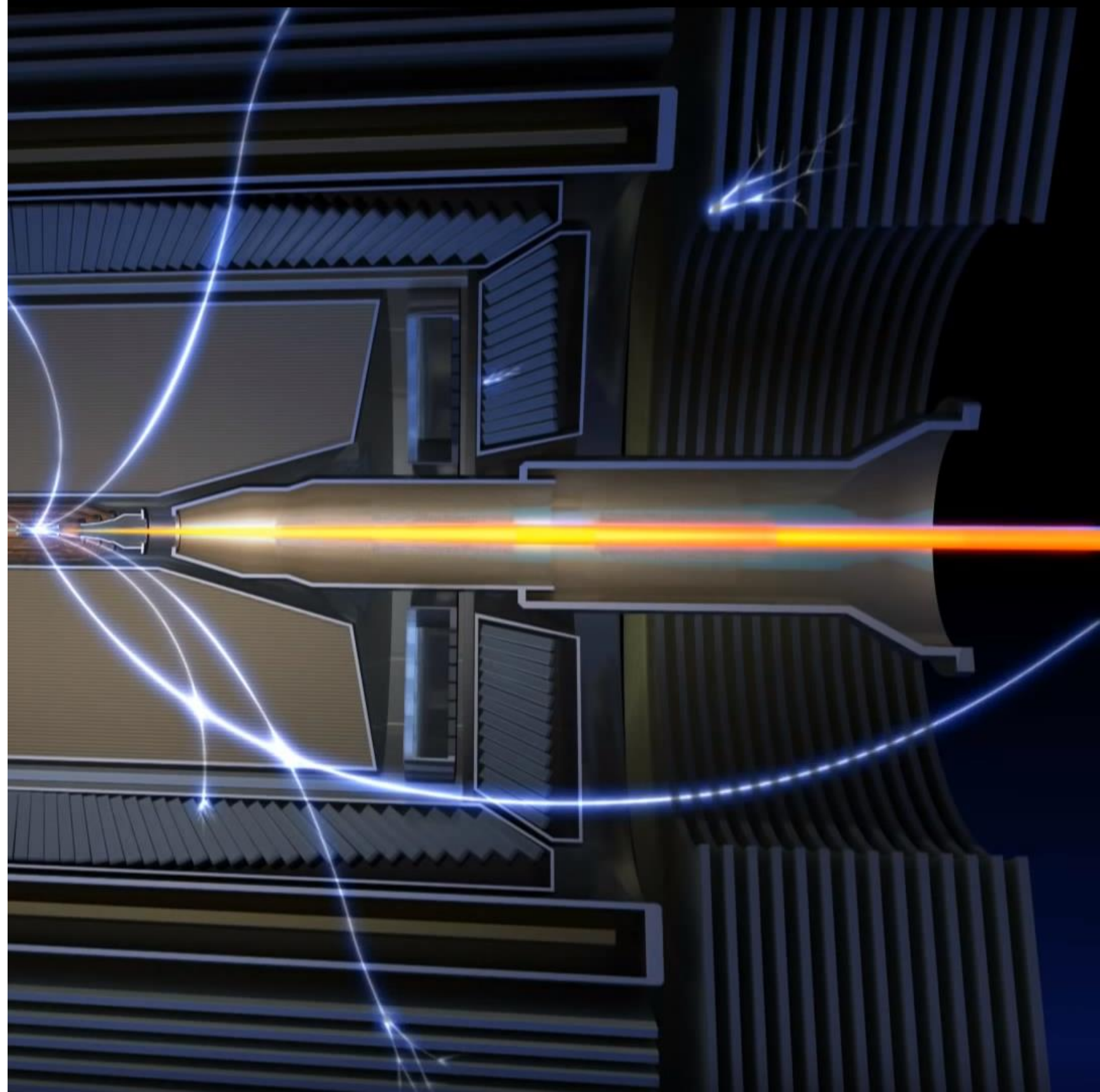
June 24, 2020

Bryan Fulsom (PNNL)

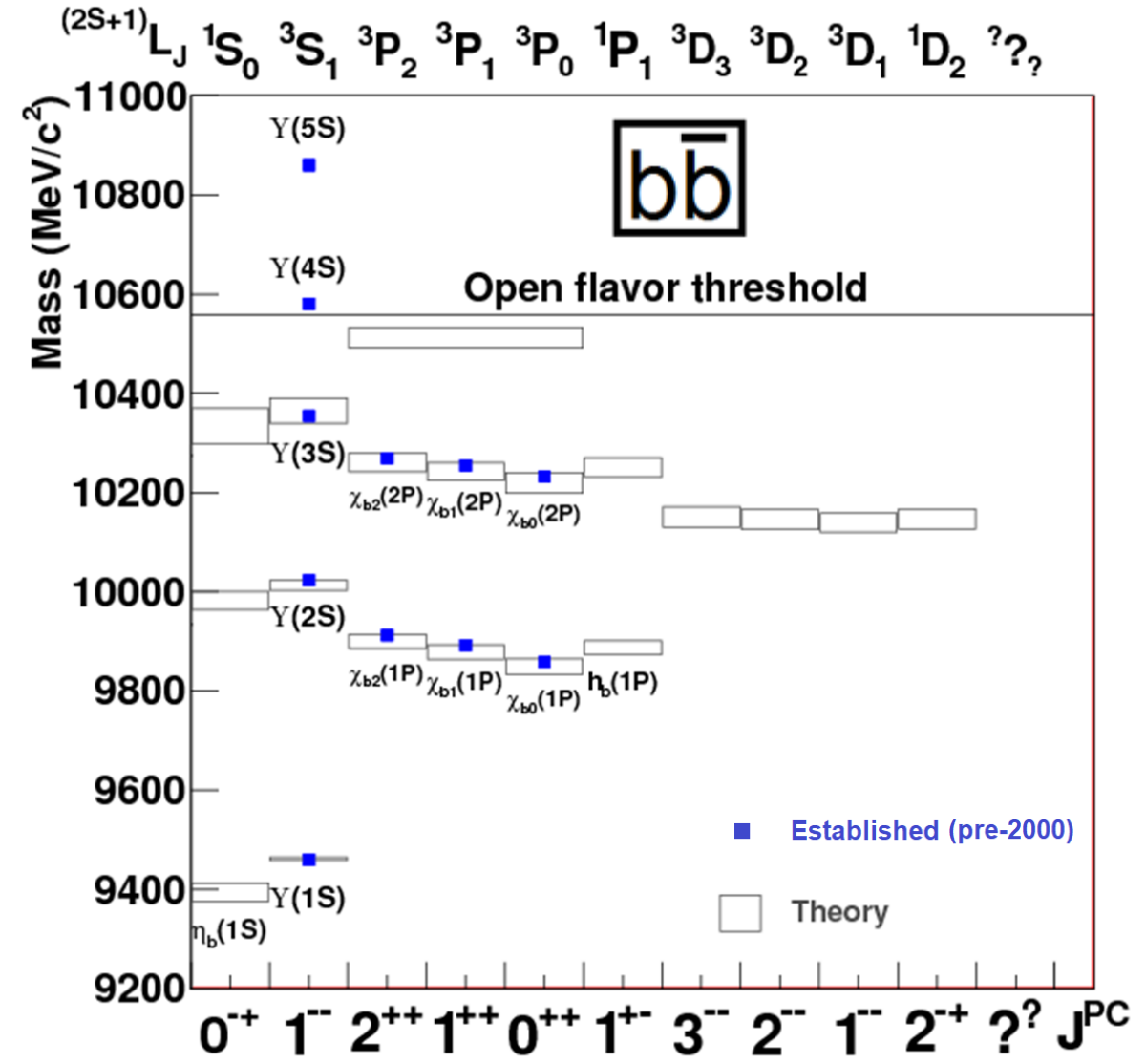
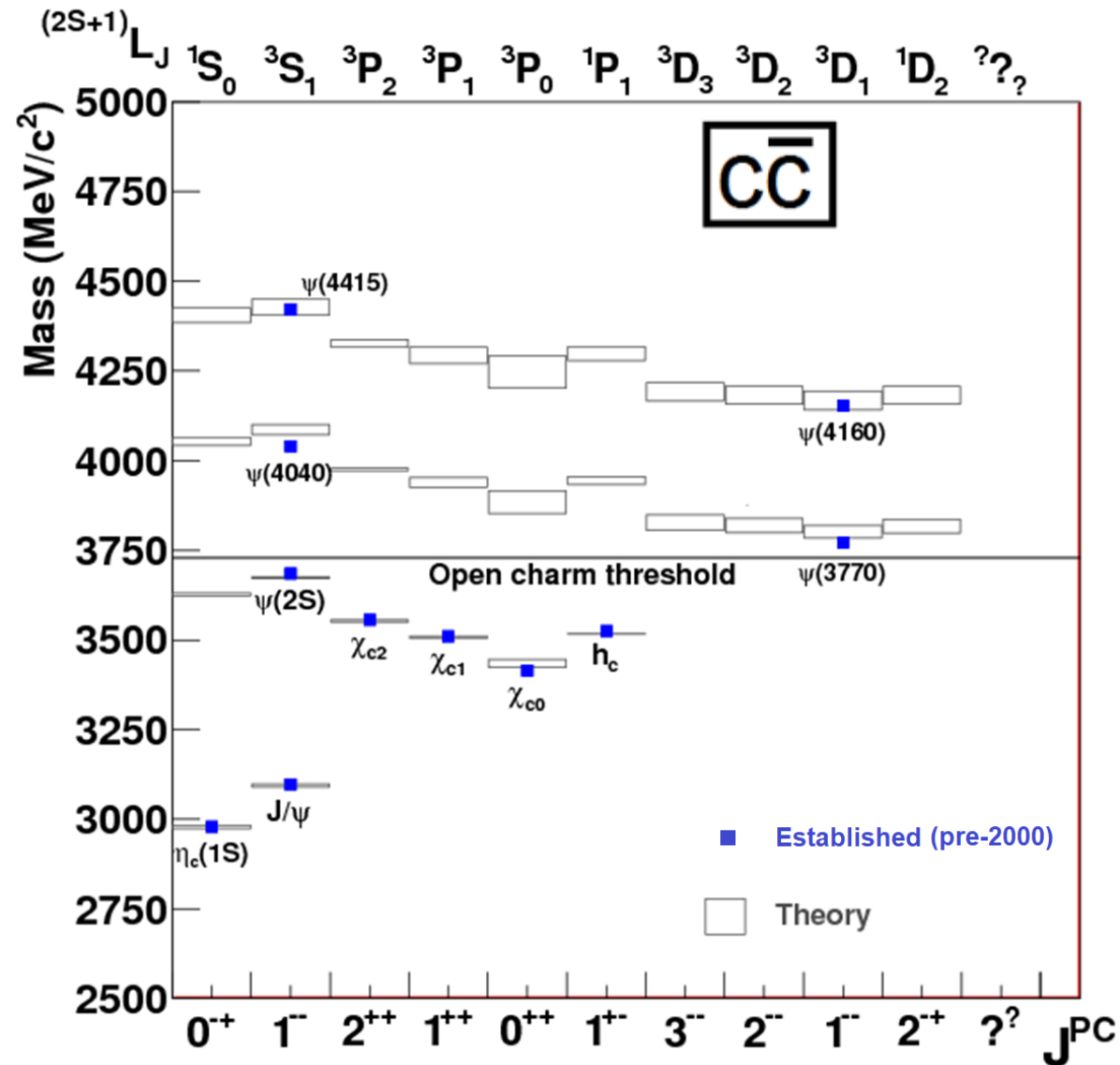
Snowmass EF06 Subtopic Meeting



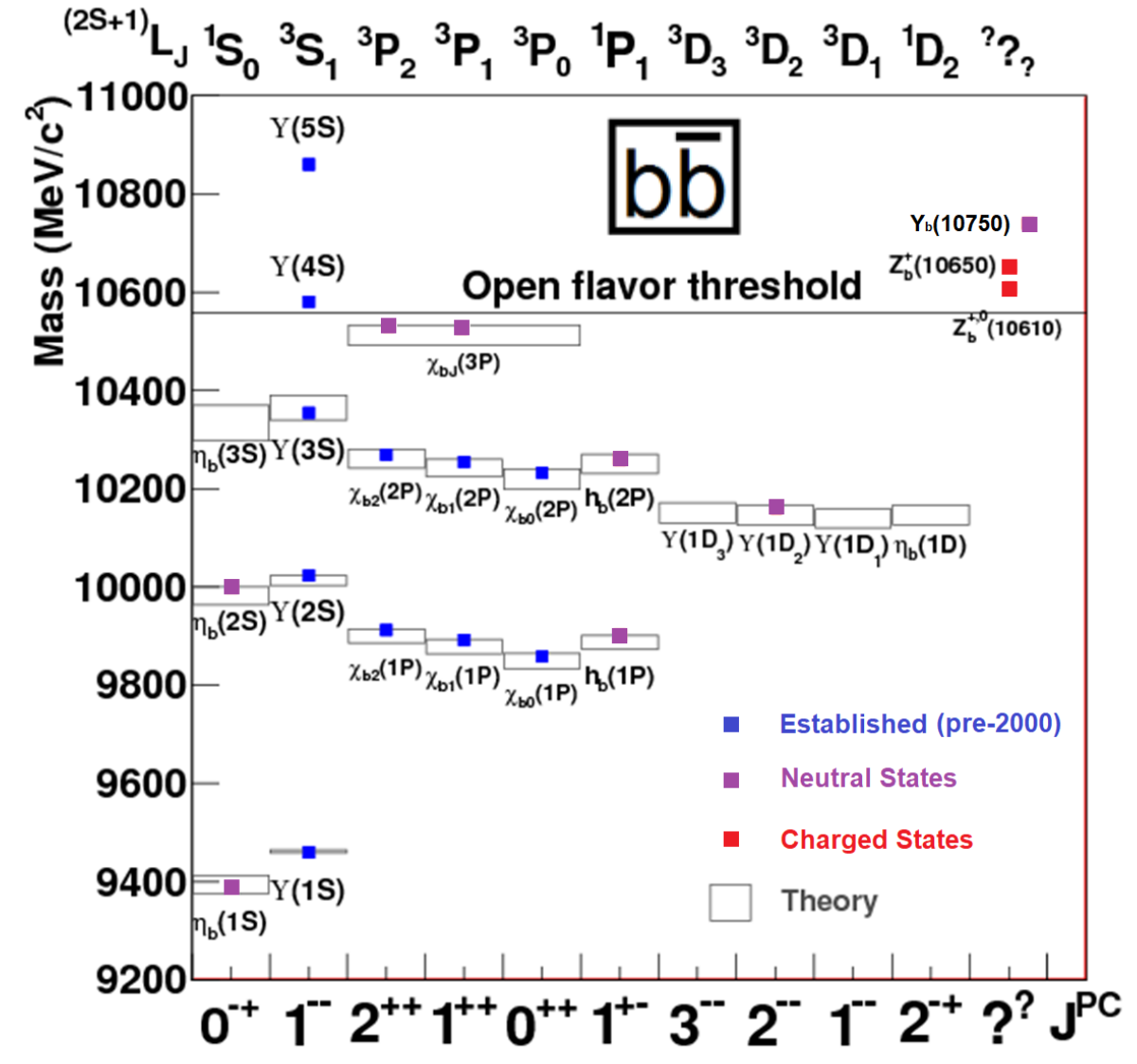
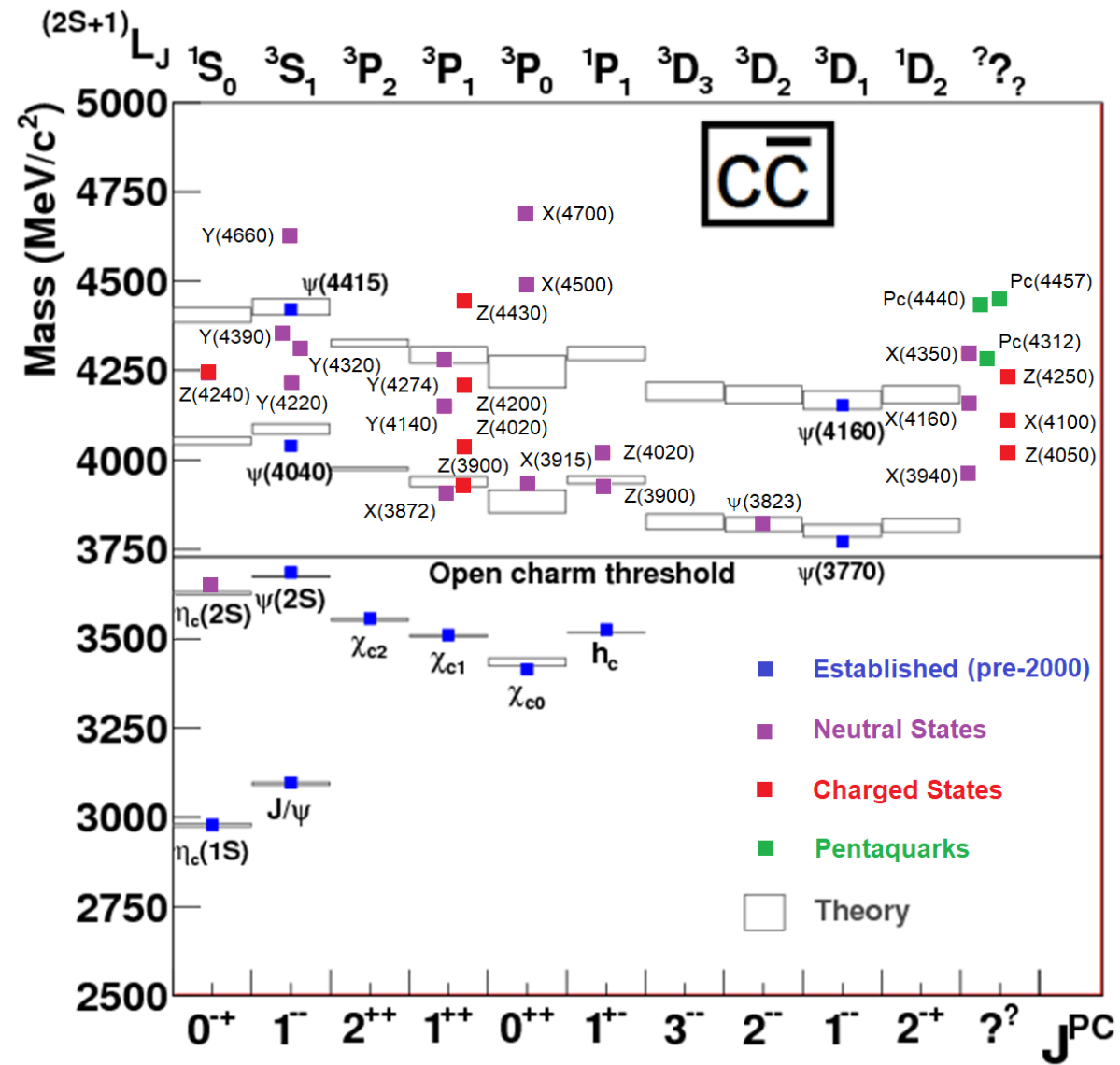
PNNL is operated by Battelle for the U.S. Department of Energy



That was then... (circa 2000)



...this is now

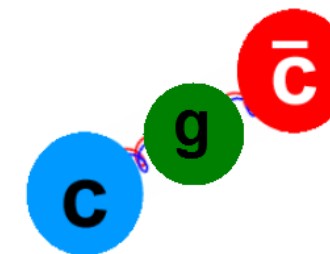


New forms of matter?

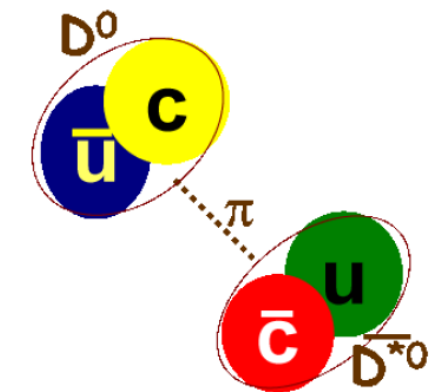
- Meson Molecules
 - Weakly bound state of mesons/baryons
- Tetraquarks/Pentaquarks
 - Di-/tri-quarks bound directly by strong force
- Other exotica
 - Hybrids: quarkonium with bound excited gluon
 - Hadroquarkonium: qq-light hadron interaction
- “Nothing special”
 - Kinematic effects / standard quarkonium
- See today’s talk by R. Lebed



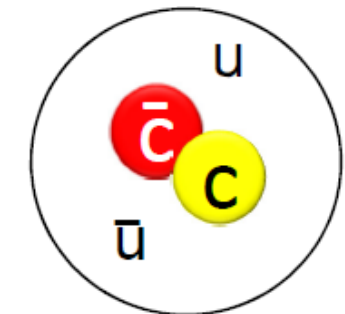
diquark-diantiquark



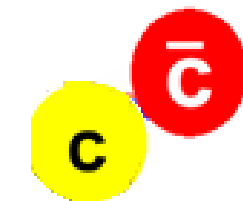
$q\bar{q}$ -gluon “hybrid”



$D^0 - \bar{D}^{*0}$ “molecule”



hadroquarkonium



conventional quarkonium

Adapted from Godfrey & Olsen,
Ann. Rev. Part. Sci. 58 (2008) 51

Today's Session

- Experimental Talks (12' each)
 - Belle II
 - LHCb
 - ATLAS & CMS
 - BESIII + Tau/Charm Factory
 - GlueX + CLAS12 + EIC
- Theoretical Overview (20')
- Discussion (20')

- For the future: Contributions encouraged (Lols, presentations, white papers)