



Sommerfeld Theory Colloquium

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A candidate for Dark Matter from QCD

Remarkably, a strong candidate for Dark Matter exists within the Standard Model. Theoretical arguments suggest that QCD forces in the flavor-singlet sector may be strong enough that the H-dibaryon is a deeply-bound, compact state which is absolutely stable with a mass $< 2m_p$. This possibility has gotten recent support from lattice QCD studies, which – although not yet at high enough resolution and sensitivity to confront the hypothesis – show a deeper binding than other states. As I will show, reasonable assumptions about the H's mass and wave function lead to the observed dark matter density and DM-to- (3-quark) baryon ratio. I will discuss why H-DM is not excluded by the various experimental and observational limits, and discuss what its observational signatures would be.

Tuesday, 3 December 2013, 16:15h, Room A348/349, Theresienstr. 37/III