



# Physical Research Laboratory, Ahmedabad

## COLLOQUIUM - 14 - 04

- Speaker:** **Dr. Sudhir Vempati**  
**Associate Professor, Centre for High Energy Physics, Indian Institute of Science, Bangalore.**
- Title:** **The Top with spin Zero**
- Date / Time:** **Wednesday, 19 February, 2014, 16.00 hrs.**
- Venue:** **K. R. Ramanathan Auditorium, PRL.**

### Abstract

The recently discovered Higgs boson has a mass within a very interesting range: (124-127) GeV. This mass range has implications not only for the Standard Model but also for extensions for it, like Supersymmetric models. In these models, the Higgs mass is predicted and its value crucially depends on the properties of the supersymmetric (spin zero) partner of the top particle, the stop. In the present talk, we discuss the properties of this particle and discuss implications on several supersymmetric models. Interestingly, for stops less than 1 TeV, the Higgs mass requires the stop mass parameters to be in a critical range: a minor change in these parameters could mean that our universe resides in a meta-stable vacuum.

### The Speaker

Dr. Sudhir Vempati obtained in B.Sc from Andhra Loyola College, Vijayawada and M.Sc, from Andhra University, Waltair, Visakhapatnam (1995). He obtained Ph.D from Physical Research Laboratory, Ahmedabad India in 2000. After spending a few months in TIFR, Mumbai as a visiting fellow, he did his postdoctoral fellowships at INFN, Padova, Italy and École Polytechnique, Paris, France. He joined Centre for High Energy Physics, Indian Institute of Science, Bangalore at the end of 2006, where he is currently an associate professor. His honours include Prof. B. R. Ramachandra Rao Memorial Prize (M.Sc), DST Ramanujan Fellowship (2009) and Prof. Priti Shankar Award for Teaching (IISc, 2012).

**Tea at 15:30 hrs.**

**ALL ARE WELCOME**