

# CU Physics Department Colloquium

Monday, October 25, 2010 4:10 PM 428 Pupin Hall

## After the Standard Model

From a particle physics point of view, the past thirty years can rightfully be considered as the golden age of the standard model. Both the theoretical and experimental knowledge of the structure of the strong and electroweak interactions have reached impressive levels of precision, and the agreement between experimental results and theoretical predictions is stunning. The standard model doesn't tell us anything about the nature of the particles whose interactions it describes, however. We hope that data taken at the LHC now and in the future will allow us to develop some understanding of the origin of particle properties. According to some models we will learn about particle masses through the discovery of the Higgs boson, while others, for example, suggest that dynamics in additional spatial dimensions might be the source of specific properties. This colloquium will review some key aspects of our current knowledge and how it was acquired, followed by a discussion of new experimental approaches needed at the LHC.

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