UCDAVIS PHYSICS

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Joint Theory Seminar

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Title: Discriminating Spin through Quantum Interference

Abstract: Many of the proposed solutions to the hierarchy and naturalness problems postulate new 'partner' fields to the standard model particles. Determining the spins of these new particles will be critical in distinguishing among the various possible SM extensions, yet such determinations will be challenging even for an ILC. We propose a new model-independent method for spin measurements which takes advantage of quantum interference among helicity states. We demonstrate that this method will be able to discriminate scalar particles from higher spin states at the ILC, and discuss application to higher spins and possible uses at the LHC.

Monday Oct. 29, 2007
12:10 - 1:30 PM Room 432 PHY/GEO