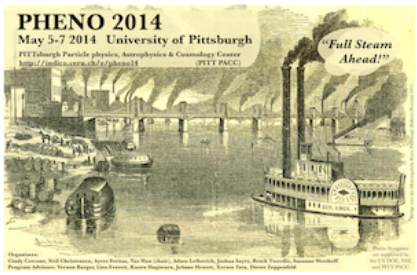

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Optimized Model-Independent Searches Using Matrix Element Ranking

Tuesday 6 May 2014 15:30 (15 minutes)

The Matrix Element Method (MEM) has become an important tool in experimental particle physics, as it provides optimal sensitivity in using data to distinguish between models that could explain that data. However, it has generally required some concrete model to describe the potential signal. Motivated by the possibility of surprises at the Large Hadron Collider (LHC), we develop a MEM-based method for determining the presence of new physics without assumptions about the signal process responsible for the new physics, using the "ranking"of background matrix elements.

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