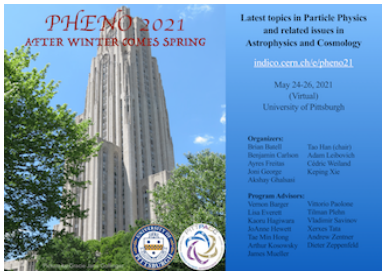

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Simplifying Multidimensional Constraints on Narrow Resonances

Monday 24 May 2021 17:45 (15 minutes)

The simplified limits framework is an approach developed to recast limits on searches for narrow resonances in terms of products of branching ratios (BRs) corresponding to the resonance's production and decay modes. In this talk, we will present an extension of the framework to a multidimensional parameter space of BRs. This can be used in a model-independent way to unfold an ambiguity in the simplified parameter ζ introduced when more than one channel contributes to the production of the resonance, and is naturally applicable to combining constraints from experimental searches with multiple observed final states. These constraints are visualized in a three-dimensional space of branching ratios by employing ternary diagrams, triangle plots which utilize the inherent unitarity of the sum of the resonance's BRs. We will briefly discuss the broader application of N-simplexes to parameterize and store digital data sets.

Summary

Primary author: OSBORNE, James (UC San Diego)

Co-authors: CHIVUKULA, R. Sekhar (UC San Diego); SIMMONS, Elizabeth (University of California, San Diego); ITTISAMAI, Pawin (Chulalongkorn University)

Presenter: OSBORNE, James (UC San Diego)

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