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Mathematical Ambiguities in Partial Wave Analysis

Friday, 23 June 2023 16:00 (20 minutes)

Mathematical ambiguities in partial wave analysis cause unavoidable problems in interpreting data from scattering experiments. These ambiguities appear as distinct sets of partial waves which can describe the same experimental data. In principle, these ambiguities may be resolved by leveraging knowledge about the physics of the process of interest, or by enforcing additional constraints. We will describe the resolution of mathematical ambiguities in the analysis of the photoproduction of spinless meson resonances, such as eta-pi photoproduction at GlueX. We will present some simulations, fits to toy data, and discuss statistical effects which might alter the treatment of ambiguities in real data.

Collaboration

Primary author: SMITH, Wyatt (Indiana University)

Presenter: SMITH, Wyatt (Indiana University)

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