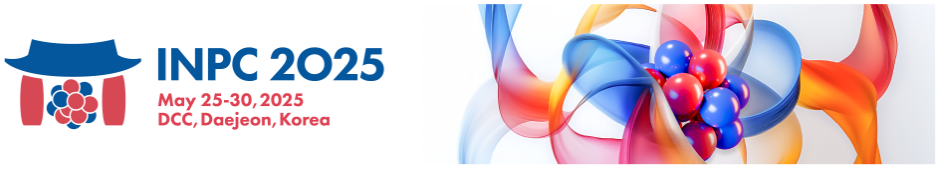

Contribution ID: **673** Type: **Contributed Oral Presentation**

Visualizing Interference Effects in Elastic α + 40Ca Scattering Using Fourier Transform

Tuesday, 27 May 2025 08:55 (15 minutes)

We study interference effects in elastic α + 40Ca scattering at Elab = 29 MeV using an optical potential model. The scattering amplitude is decomposed into near-side and far-side components, further divided into barrier-wave and internal-wave parts. Each component uniquely shapes the angular distribution. Applying Fourier transform techniques, we visualize interference patterns and identify peaks at specific scattering angles. This analysis reveals structural features beyond what is evident in differential cross sections.

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Session Classification: Parallel Session

Track Classification: Nuclear Reactions