

Abstract Submitted
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Using hyperspherical coordinates to analyze many-particle fragmentation experiments¹ PEYMAN FEIZOLLAH, JYOTI RAJPUT, BEN BERRY, BETHANY JOCHIM, T. SEVERT, KANAKA RAJU P., K. D. CARNES, I. BEN-ITZHAK, B.D. ESRY, J. R. Macdonald Laboratory, Department of Physics, Kansas State University, Manhattan, KS 66506 USA — Analyzing and plotting the distribution of momenta for processes producing more than two fragments has long been a challenge for two reasons: lack of an appropriate representation and our inability to effectively plot and visualize more than two or three dimensions. While there is little that can be done about the latter, we propose using hyperspherical coordinates to address the former. Existing methods such as Newton and Dalitz plots give us information about the fragmentation process for three or four bodies, but neither can be easily generalized to fragmentation with an arbitrary number of particles. We will show that hyperspherical coordinates provide a systematic framework for doing exactly this. We will compare the suggested method with Newton and Dalitz plots for three-body breakup and discuss the similarities and differences between them.

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