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Getting the Most from Your Solenoidal Spectrometer: Advanced Targetry

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In any measurement, three components contribute to the quality of the final result: the detector system, the beam, and the target. In the case of Solenoidal Spectrometers, which improve the experimental resolution of an inverse kinematics measurement by effectively countering kinematic compression, the other components—beam and target—play a critical role. In-flight beams reduce the achievable resolution through the introduction of uncertainties in the reaction location; cocktail beams introduce uncertainty in the form of background reactions. Similarly, the choice of target can make or break a measurement. Thick targets, targets with stoichiometric contaminants, or targets with windows or backing materials, can all negatively impact the experimental resolution. In this talk, I will discuss advanced targetry techniques, such as frozen or gas jet targets, and their use in reaction measurements with Solenoidal Spectrometers.

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