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Ideas and Considerations for a Cryogenic Gas Target for the ISS

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A cryogenic gas target would be a key device for maximising the range of studies that are possible with the ISS at HIE-ISOLDE. Such a target would open up a number of opportunities relevant to nuclear astrophysics (capitalising on the unique suite of HIE-ISOLDE beams), including (α, p) reactions as well as being a key tool for structure research [through e.g. $(^3\text{He}, d)$].

The preliminary design of this target is based on the device previously employed with HELIOS at Argonne National Laboratory. In this talk, we will discuss some of the physics opportunities of the device as well as discussing some of the technical challenges.

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