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The concept of an inverse geometry for a high power UCN source

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Ultra-cold neutrons (UCN) are an important experimental tool to advance the understand of particle physics, nuclear physics, astrophysics, and cosmology. Unfortunately, many of these UCN experiments are statistically limited. To help to overcome these limitations, we are proposing a so-called inverse target geometry. This geometry takes advantage of the same backscattering principle that was used in the design of the Lujan Center upper tier backscattering moderators. In this presentation we will present the underlying physics of the inverse target geometry and the neutronics optimization of a physics model.

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