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## On the applicability of Eddington's inversion methods to direct dark matter searches

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Predictions for direct dark matter searches rely on the knowledge of the local speed distribution of dark matter particles. This distribution can be derived within a dynamically constrained Milky Way mass model using the Eddington formalism or some extended versions of it. This method, however, can lead to inconsistent or unphysical solutions, depending on the details of the mass model. I will discuss the limitations of the method and its applicability to predictions in direct detection. I will also discuss how it may, or may not, capture the actual dynamics of dark matter by comparing with cosmological simulation results.

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