Dependence of Sagittarius tidal stream properties on dark matter model

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Abstract

The Sagittarius (Sgr) tidal stream is a large, complex structure of stars from the Sagittarius dwarf galaxy which wraps around the Milky Way. Precisely characterizing its kinematics can constrain the properties of the Sgr and Milky Way halos, providing information about the properties of the dark matter therein. We use N-body simulation methods to simulate the entire infall of Sgr, modeling the dark matter halos using CDM and SIDM models. We compare the resulting predicted tidal streams to determine the relationship between dark matter models and the tidal stream structure. Finally, we compare these results to Sgr stream data.

Outline