

Clustering of dark matter in the cosmic web as a probe of massive neutrinos

The large-scale structure of the universe is distributed in a cosmic web. Studying the distribution and clustering of dark matter particles and halos may open up a new horizon for studying the physics of the dark universe. In this work, we investigate the nearest neighbour statistics and spherical contact function in cosmological models with massive neutrinos. For this task, we use the relativistic N-body code, *gevolution* and study particle snapshots at three different redshifts. In each snapshot, we find the halos and evaluate the letter functions for them. We show that a generic behaviour can be found in the nearest neighbour, $G(r)$, and spherical contact functions, $F(r)$, which makes these statistics promising tools to constrain the total neutrino mass.

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