

Department of Theoretical Physics



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Surfing the cosmic web with tessellations

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Room A304

The modern galaxy surveys indicate that the galaxies are distributed in an interconnected complex network of elongated filaments, sheetlike walls and compact clusters surrounded by nearly empty voids. The cosmic web is the most salient manifestation of the anisotropic nature of gravitational collapse, the motor behind the formation of structure in the cosmos. Quantifying the cosmic web and understanding its origin is a challenging problem in cosmology. The Delaunay tessellation field estimator (DTFE) is a self-adaptive and parameter free way of estimating density. DTFE is very efficient in discovering shapes in the density fields than the conventional kernel based methods. In this talk I will present a Delaunay tessellation based technique to quantify the geometry and topology of the cosmic web.



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