

Seminarium Astrofizyczne

wtorek 05.04.2022 godz. 12:30

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Morphology of the largest cosmic structures

Minkowski Functionals have been introduced in cosmology in the early '90ies to generalise the use of the so-called genus curve, as spatial statistics to describe the geometry and topology of cosmic structures. Their use is actually widespread in statistical physics and image analysis. I will introduce the mathematical basics, illustrate the calculation of Minkowski Functionals for ideal bodies modelling relaxed and unrelaxed galaxy clusters (Schimd, Sereno 2021), and illustrate two more recent applications in cosmology: the study of the morphology of N-body galaxy clusters (Bonnet, Nezri, Kraljic, Schimd 2022) and of 21-cm intensity maps (Spina, Porciani, Schimd 2022).

Serdecznie zapraszam,

Agnieszka Majczyna