Contribution ID: **86**   Type: **not specified**

Topological data analysis and complex network methods in analysing Cosmic Web (online)

Wednesday, 25 January 2023 10:30 (20 minutes)

I will present a review of modern methods of topological data analysis and complex network analysis applied to the Cosmic web, formed by the large-scale distribution of matter. We will compare the advantages and disadvantages of both approaches and explore what new information and utilities can both of them bring to cosmological and extragalactic studies, compared to traditional cosmological tests and probes. Both approaches were first tested on cosmological simulation data, possessing the fullness of observational information, unlike the real catalogs. However, new large galactic catalogs open new perspectives for the usage of discussed fine instruments to reveal the nature of the Cosmic Web, and even the possible imprints of primordial magnetism on it.

Presenter: TSIZH, Maksym (University of Bologna)

Session Classification: Wednesday