

Topic: Exploring Gravity Through Cosmic Structures: From the Web to Dyson Spheres

Speaker: Prof. Shant Baghrum

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Abstract: The Λ CDM model of cosmology provides a robust framework for understanding the formation and evolution of cosmic structures. In this talk, I will outline the process of structure formation and introduce the cosmic web, highlighting its key components: halos, filaments, sheets, and voids. I will then discuss two approaches to analyzing the statistics and distribution of these structures: The Excursion Set Theory and One-Point Statistics. Using these frameworks, I will also explore how they can be employed to test the principles of general relativity and its assumptions. Finally, I will present the concept of Dyson spheres—artificial megastructures built by advanced civilizations to harvest stellar energy—and consider their relevance within the broader cosmological context.

Held in hybrid format

Date: Wednesday, June 18, 2025

Time: 12:30pm – 1:30pm

Location: Seminar Room School of Particles
and Accelerators, IPM, Larak Building, Tehran

More Information

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<https://indico.hep.ipm.ir/e/Sh.Baghrum>

Link to join virtually: <https://www.skyroom.online/ch/ipm-particles/special-seminar>