

# From Planck to Planck: the interplay between cosmological observations and fundamental physics

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**Date and time:** Sunday, 8th of Mehr (30th of September), 2 pm


**Place:** Lecture room A, Farmanieh building

### Abstract:

In the era of precision cosmology, various large-scale cosmological collaborations have already been formed with the ambitious objective of mapping the entire observable region of space-time. This has provided us with detailed understanding of the universe, its birth, evolution, future and elementary building blocks. Cosmological, multi-messenger observations play an essential role also in the development of fundamental physics, which ranges from understanding the nature of gravity and other fundamental interactions to addressing basic questions about the structure of spacetime. In this colloquium, I will take the audience on a journey from the precise cosmological measurements we have made today, and in our low-energy epoch, to far in the past when the universe was dramatically more energetic and exotic. I will focus on the latest release of the cosmological results provided by the Planck collaboration, and will discuss the implications of the observations for fundamental physics, from the very low energies that we live in today all the way to the Planck scale, the highest energy scale in our standard frameworks of particle physics and cosmology.

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