UCLA

# Theory of Elementary Particles, Astroparticle Physics, and Phenomenology (TEPAPP) Seminar

*Thursday, December 2nd @ 4:00PM*
*Held Virtually*

## "Probing Dark Energy and Inflation with Gravitational Waves"


## Valeri Vardanyan (Kavli IPMU)



**Abstract:** In this talk, I will summarize several recent results about gravitational wave cosmology in the context of dark energy and inflation. In the first part of the talk, I will concentrate on astrophysical gravitational waves and will argue that the spatial clustering of gravitational wave sources provides a wealth of invaluable information. I will present a new powerful method and will demonstrate its applications for testing dark energy models, and for identifying the potentially primordial origin of gravitational-wave black holes. In the second part of the talk, I will discuss gravitational waves produced during inflation and will revisit the implications of their possible near-future detection for inflationary models. I will particularly present a working proposal of resonant gravitational wave production during inflation due to non-linear effects and will discuss the implications for the well-known Lyth bound.