Contribution ID: **22** Type: **not specified**

Cross-correlation of the astrophysical gravitational-wave background with galaxy clustering

Thursday 10 December 2020 14:30 (20 minutes)

We investigate the correlation between the distribution of galaxies and the predicted gravitational wave background of astrophysical origin. We show that the average contribution to the background as a function of redshift can be easily constrained by cross-correlating with galaxy catalogs at different redshifts. Furthermore, the interpretation of this signal allows us to address the discrepant predictions for the autocorrelation signal available in the literature. Because we show that the impact of shot noise is negligible, our results suggest that the gravitational-wave background, when combined with near-future galaxy surveys, is a powerful probe for both gravitational-wave merger physics and cosmology.

Primary author: VARDANYAN, Valeri (Kavli IPMU)

Presenter: VARDANYAN, Valeri (Kavli IPMU)

Session Classification: Contributed talks