Contribution ID: **43** Type: **Pulsar Timing Arrays**

Scalar-induced gravitational waves with future PTA data

Monday 5 May 2025 15:02 (1 minute)

The evidence for a stochastic gravitational wave background at nHz frequencies by Pulsar Timing Array (PTA) observations offers an opportunity to discover cosmological signals and threatens the observability of other subdominant gravitational waves (GWs). We explore prospects to constrain scalar-induced GWs associated with enhanced curvature perturbations in the primordial universe, forecasting realistic future PTA datasets. We assess how the currently observed signal could eventually limit future capabilities to search for GW relics of primordial phenomena and the associated phenomenological consequences, such as the formation of primordial black holes.

Authors: CECCHINI, Chiara (University of Trento, TIFPA-INFN); Mrs FRANCIOLINI, Gabriele; PIERONI, Mauro (CERN)

Presenter: CECCHINI, Chiara (University of Trento, TIFPA-INFN)

Session Classification: Pulsar Timing Arrays