

# Fundamental physics in the cosmos: The early, the large and the dark Universe



Contribution ID: 20

Type: **not specified**

## Gravitational Wave Oscillations in Bigravity

*Thursday 28 September 2017 17:47 (17 minutes)*

With the first detection of a gravitational wave signal in September 2015 by the LIGO collaboration, a new era in physics has begun. Gravitational wave astronomy allows us to probe the contents and properties of our Universe in a completely new manner, accessing so far inaccessible scales and phenomena.

In this talk I will present one such phenomenon, dubbed gravitational wave oscillations, which, in full analogy to neutrino oscillations, arises in theories of multi-metric gravity, where the matter and propagation bases do not coincide. It is illustrated how the presence of more than one tensor field modifies the wave form observed in a detector on the Earth and how this can be used to put constraints on the parameter space of the model.

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**Session Classification:** Parallel Sessions: Cosmology & Astroparticle Physics - Inflation + Gws

**Track Classification:** Cosmology & Astroparticle Physics