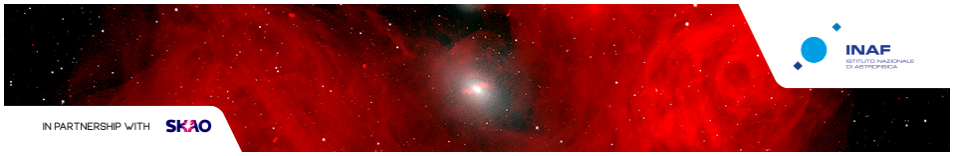


Contribution ID: **64** Type: **not specified**

# Search for gravitational waves from individual massive black hole binaries in MeerTime data

*Thursday, 30 November 2023 10:10 (25 minutes)*

Although the recent evidence presented by PTAs is that for a stochastic gravitational wave background (GWB) which was most likely produced by the superimposition of a number of GW signals, simulations of the merger history of supermassive black hole binaries (SMBHBs) suggest a narrow possibility of the detection of some of the most massive or fortunately located individual continuous GW (CGW) sources in the highest precision PTA datasets that are currently being generated. The detection of CGW sources in the nHz regime would go beyond confirming the existence of sub-parsec SMBHBs, and probe their dynamics, as well as provide several tests of fundamental physics.
In this talk, I will present the results of a search for CGWs in the first MeerTime pulsar timing array (MPTA) dataset, consisting of ultra-precise TOAs of 88 MSPs. MeerTime is a large survey project of MeerKAT, one of the most sensitive radio telescopes and a precursor to the Square Kilometer Array (SKA), in South Africa.

## Reasearch area

Gravitational Waves

**Primary author:** Ms MORESCHI, Beatrice ('G. Occhialini' Dipartimento di Fisica, Università degli Studi di Milano-Bicocca)

**Presenter:** Ms MORESCHI, Beatrice ('G. Occhialini' Dipartimento di Fisica, Università degli Studi di Milano-Bicocca)

**Session Classification:** Parallel - Transients, Pulsars, GW