



ID de Contribution: 25

Type: **Oral presentation**

Exploring the Uncharted: Proposing High-Frequency Gravitational Wave Detection in the MHz-GHz Range

jeudi 29 février 2024 15:00 (15 minutes)

The gravitational wave (GW) spectrum is a vast frontier, teeming with diverse sources and spanning a wide range of frequencies. The groundbreaking work of LIGO/Virgo in the kHz regime has unveiled approximately 100 compact binary mergers, with ongoing observations in its O4 run promising new and intriguing detections. In the nHz band, pulsar timing arrays (PTAs) are diligently exploring the cosmos, providing initial evidence of a low-frequency stochastic gravitational background, likely emanating from the cosmic dance of supermassive black hole mergers.

Looking ahead, the recently accepted LISA project by the European Space Agency (ESA) holds promise for probing the mHz band in the near future. However, the terrain above LIGO/Virgo frequencies remains largely unexplored. This talk aims to address the intriguing question: What lies in the high-frequency realm, specifically in the MHz-GHz range? Are there plausible sources that could generate GWs at such elevated frequencies, and what innovative detection strategies could be envisioned to unlock this cosmic symphony? Join us as we delve into the uncharted territories of high-frequency GWs, proposing a framework for their detection and opening new avenues for our understanding of the gravitational wave universe.

Astrophysics Field

Compact objects (supernovae, black holes, neutron stars)

Day constraints

Auteur principal: LEHOUCQ, Léonard (Institut d'Astrophysique de Paris)

Orateur: LEHOUCQ, Léonard (Institut d'Astrophysique de Paris)

Classification de Session: Session 7