

## 12th Iberian Gravitational Waves Meeting



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# RECENT RESULTS AND FUTURE CHALLENGES FOR CONTINUOUS GRAVITATIONAL WAVE SEARCHES WITH A NETWORK OF TERRESTRIAL GRAVITATIONAL WAVE DETECTORS

*Wednesday 8 June 2022 14:30 (45 minutes)*

Following the historic discovery of the signals from coalescing black hole and neutron star (NS) binaries, a new frontier in gravitational wave (GW) research is the detection of sources emitting periodic continuous waves (CWs).

Fast rotating NSs, emit a nearly monochromatic CW signal, whose frequency is proportional to the spin frequency.

An electromagnetic (EM) counterpart of CWs is expected, for example in the case of young rotation- powered pulsars, accreting NSs in binary systems and new-born magnetars. EM-silent NSs are also potential CW sources.

The detection of GWs from these sources is a high priority task for the LIGO/Virgo/KAGRA col- laborations. The most recent efforts and results, together with future challenges, will be presented in this talk.

**Presenter:** ASTONE, Pia (INFN - National Institute for Nuclear Physics)