**GEMMA 2** 



Contribution ID: 47

Type: Poster

## Persistent gravitational-wave search from the NS 1987A

Continuous gravitational waves (CWs) from asymmetric spinning neutron stars are among the most interesting targets of the Advanced LIGO-Virgo-KAGRA detectors. To date no CW signal has been detected yet, although stringent upper limits have been placed on the CW strain amplitude. The search for such class of signals is, however, quite difficult due to their expected weakness, and can be very computationally expensive when the source parameters are not known or not well constrained.

The stochastic background of gravitational waves (SGWB), on the other hand, is being searched over using cross-correlation techniques, and can be generated by the superposition of a wide variety of independent and/or unresolved both astrophysical and cosmological sources, or persistent gravitational waves in specific directions.

Recent investigations have shown that stochastic directional searches have the ability to detect CWs, with less sensitivity than CWs searches, but with small computing requirements.

Hence, it is timely to establish the basis for a common approach consisting of using SGWB algorithms to quickly identify CW signals, which will be then properly followed up with ad hoc CW pipelines, analyzing the most recent observational advanced LIGO-Virgo-KAGRA data set.

Primary author: SALVADORE, Claudio (Istituto Nazionale di Fisica Nucleare)

Co-authors: Dr LA ROSA, Iuri; Prof. LEACI, Paola (Istituto Nazionale di Fisica Nucleare)

Session Classification: Gravitational Waves

Track Classification: Gravitational waves