

## **Proposed talk for the journées SF2A**

Speaker: Dimitri Estevez

### **Title:**

What information on the gravitational-wave candidates can be expected during the next LIGO-Virgo-KAGRA observations?

### **Abstract:**

For the LIGO-Virgo GWTC-2.1 and GWTC-3 catalogs, the probability of astrophysical origin has been chosen as threshold to report full parameter estimation for gravitational-wave candidates from compact-binary coalescences (CBC).

This probability is computed by each of the search pipeline used, together with a source classification divided into three astrophysical categories: Binary Neutron Stars (BNS), Neutron Star Black Hole (NSBH) and Binary Black Holes (BBH).

This classification and associated probabilities will be, during the upcoming run, a key information for public alerts that can help the astronomers to decide whether to undertake a follow-up of the sources or not.

We will use the results of one of the LIGO-Virgo-KAGRA CBC search pipeline, called MBTA, to summarize the meaning and limitations of the provided quantities for the third observing run O3 and to discuss what could be expected during O4.