

Targeted search and ensemble procedure for the detection of gravitational waves from known pulsars

We present a multiple test for the targeted search of continuous gravitational waves from an ensemble of known pulsars, combining multidetector single pulsar statistics defined through the 5n-vector method. In order to maximize the detection probability, we describe a rank truncation method to select the most promising sources within the ensemble, based on the p-values computed for single pulsar analysis. We also present the results obtained considering a set of 220 known pulsars and the O3 LIGO and Virgo datasets. No evidence of a GW signal from the ensemble was found, so we set 95% credible upper limit on ensemble parameters.

Primary author: D'ONOFRIO, Luca (Istituto Nazionale di Fisica Nucleare)

Presenter: D'ONOFRIO, Luca (Istituto Nazionale di Fisica Nucleare)