

# The 3rd KMI School Machine Learning in Particle and Astrophysics

Contribution ID : 22

## Breakout room #4: Detection and parameter estimation for GW-burst signal with machine learning

Tuesday 17 Nov 2020 at 14:20 (01h30')

### Content :

In recent years, machine learning(ML) has begun to be used to find out small signal of gravitational wave(GW) from noisy data and to estimate physical parameters of it. The approach is an alternative to using templates, by which the parameters are estimated by matching with theoretical models. George and Huerta (2018) demonstrated the ML method for GW from binary black holes. It is important to explore the possibility of detection and estimation for different types of GW signals. We consider the possibility of detection and parameter estimation for GW burst by ML. Since the wave forms, e. g., driven by magnetar giant flares, are uncertain at present, we model them and explore the ability of the ML approach. We use the same algorithms based by convolution neural network used in binary black hole merger by George and Huerta (2018). In this poster, we discuss accuracy of detection and how much error we can estimate parameters.

**Primary authors :**

**Co-authors :**

**Presenter :** KIMURA, Yuto (Hiroshima University)

**Session classification :** Virtual Poster Session

**Track classification :** --not yet classified--

**Type :** --not specified--