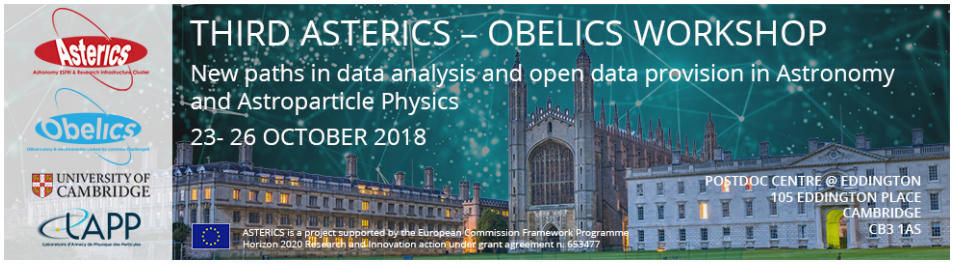

Contribution ID: **46** Type: **not specified**

Machine Learning applications in Gravitational Wave research

Wednesday, 24 October 2018 09:00 (30 minutes)

Noise of non-astrophysical origin contaminates science data taken by the gravitational-wave detectors. Characterization of instrumental and environmental noise has proven critical in identifying false positives in the first observing runs. In this context the application of different machine learning methods can help in achieving, for example, a fast classification of transient events to disentangle noise from gravitational signals helping a fast real time analysis. Moreover, these approaches could be used to disentangle Gravitational signals from noise. Deep Learning techniques could even be used to the aim of non linear noise cancellation to condition the data before any detection algorithm will be used and there are promising on-going studies on simulated data.

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