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Physics-Informed Neural Networks for Gravitational Waves

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Detected Gravitational Waves are goldmines of information on the compact binary emitting systems. Usually MCMC techniques infer parameter's values in a 15-dimensional parameter space in an accurate way, but they are very lengthy. On the other hand, Physics-Informed Neural Networks (PINNs) are a rapidly emerging branch of Supervised Machine Learning, devoted precisely to solve physical problems. This talk will discuss how PINNs can help to speed up the inference process and how this new ML approach can be applied in current (LIGO-Virgo-KAGRA) and future Gravitational Wave experiments (ex. Einstein Telescope).

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