

# Broad parameter space searches and machine learning

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One of the key sources for LIGO-Virgo-Kagra is rapidly spinning neutron stars. These long duration and weak signals introduce many computational challenges including analysing large volumes of data and a wide parameter spaces. When searching for continuous signals with no prior knowledge of its frequency evolution, typical matched filtering approaches become computationally infeasible leading to a need for different analysis techniques. I will introduce one search called SOAP which covers a broad parameter space and discuss how machine learning can be used to aid with these searches.

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