

Learning-based models for gravitational wave analysis

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The LISA space-interferometer will simultaneously acquire gravitational waves emitted from thousands of sources through three time series.

The disentanglement of these signals poses a challenging underdetermined source separation problem.

To isolate signals based on their individual signatures, we introduce a new source separation algorithm based on learning signal representations in a similar fashion to autoencoders.

Our method makes it possible to efficiently extract physically meaningful signals from the entangled data.

This will be illustrated on realistic simulations of the LISA data.

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