

Inference and probabilistic modelling with machine learning for LISA data analysis

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In my talk I am going to concentrate on the models of machine learning which allow us to learn the probability distributions and apply it to the important unsolved problems in the LISA data analysis.

First I am going to talk about fast Bayesian parameter estimation for the Massive Black Hole Binaries (MBHBs) with the Normalising flows. This will solve an important problem of predicting MBHBs mergers, which can ensure the timely triggers for EM follow-ups.

Afterwards I will focus on the source separation problem and the way to separate the mixed signal in the LISA data stream.

Finally I will talk about the problem of the gaps in the LISA data and models which allow to estimate the joint probability distribution of the noise plus signal and generate the missing data without any assumptions on the signal model.