

LISA data analysis: from classical methods to machine learning

lundi 21 novembre 2022 - vendredi 25 novembre 2022

L2IT Toulouse

Programme Scientifique

OVERALL ORGANISATION

The workshop is divided into a training part, running from Monday morning to Wednesday morning, and a conference part, running from Wednesday afternoon to Friday morning.

TRAINING PART

The training part is composed by introductory lectures and training sessions. Introductory lectures will provide a broad overview of the main topics of the workshop, while each training session will have a total duration of 3 (non-consecutive) hours with the aim of teaching both the theoretical bases of a specific topic as well as its practical applications through hands-on tutorials with GW data analysis codes.

Introductory lectures

Sylvain Caillou | L2IT | Introduction to Machine Learning

Maude Le Jeune | APC | Introduction to LISA Data Analysis

Training sessions

Joe Bayley + Michael Williams | Univ. Glasgow |

GW Detection with Traditional vs Machine Learning Techniques

Stephen Green + Natalia Korsakova | Uni. Nottingham + APC Paris |

GW Parameter Estimation with Bayesian Machine Learning

Micheal Katz + Lorenzo Speri | AEI Potsdam |

GPU Techniques to Accelerate GW Waveforms and Data Analysis Computations

Stas Babak (based on a tutorial by Christopher Moore) | APC Paris |

Gaussian Process Regression

CONFERENCE PART

The conference part will host both invited and contributed talks, as well as discussion sessions on specific arguments related to LISA data analysis and machine learning applications to GW data analysis.

Invited international speakers

Alvin Chua | Univ. Singapore

Nikos Karnesis | Univ. Thessaloniki

Kristen Lackeos | MPIfR Bonn

Laura Sberna | AEI Potsdam

Key national speakers

Stas Babak | APC

Quentin Baghi | CEA

Jean-Baptiste Bayle | Univ. Glasgow

Olaf Hartwig | SYRTE

Natalia Korsakova | APC

Sylvain Marsat | L2IT

Hong-Nga Nguyen | CNES

Antoine Petiteau | CEA

