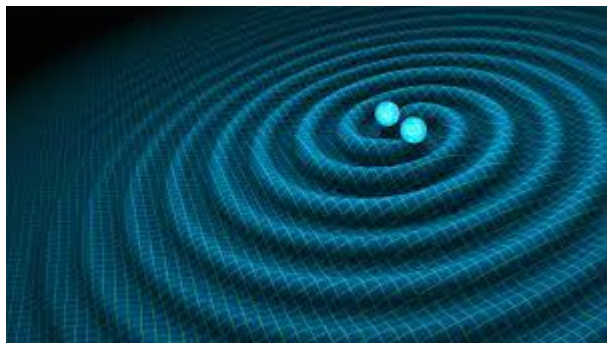
SUPERVISOR MODULE

COMPACT TENSOR DECOMPOSITION BASED MODELS OF GRAVITATIONAL WAVES

Details Studenten

Data/information in the form of higher-order tensors are abundantly present in many domains of scientific computing. In many cases, these often large higher-order tensors can be approximated by compact multilinear decompositions. Such decompositions allow one to faithfully represent a physical model with only a fraction of the data and at a fraction of the computational cost.

In this thesis, we seek to use the techniques of tensor rank decomposition/canonical polyadic decomposition to represent gravitational waves, ripples in the fabric of spacetime. In particular, we aim to make compact decompositions of gravitational waves from complex cataclysmic phenomena such as the collision of black holes/neutron stars or stellar explosions.



Picture credit: R. Hurt/Caltech-JPL

Bijlagen

Bijlage toevoegen (<30MB)

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VOEG TOE

Promotoren	Co-promotoren	Mentors	Assessoren
Lieven De Lathauwer Tjonnie Guang Feng Li			

Project URL

(leeg)

Naam organisatie / URL

(leeg)

Opmerkingen

The required know-how w.r.t. tensor methods is acquired through discussions, attending a few lectures and a limited, guided study of the literature. A concise course text is available.

Wiskundige ingenieurstechnieken

Mathematical Engineering

Status
ontwerp
2025-03-04 12:34:20
Laatst gewijzigd door
Lieven De Lathauwer
Disciplines
NUMA

Status

STADIUS

Plasma-astrofysica

Embargo

Aantal studenten

1 - 2

‹ **OVERZICHT ONDERWERPEN**