

A Gravitational-Wave Perspective on Neutron Star Seismology

Thursday, 26 October 2023 10:00 (30 minutes)

Neutron star seismology, which aims to probe the extreme physics associated with these objects, is of increasing relevance for gravitational-wave astronomy. Focussing on the fundamental mode of oscillation, which is an efficient gravitational-wave emitter, I will outline the seismology aspects of a number of astrophysically relevant scenarios; ranging from the star's birth in a core collapse through to transients (like pulsar glitches and magnetar flares), the dynamics of tides in inspiralling neutron-star binaries, the oscillations of the final merged object and instabilities that may be acting in the remnant (or, indeed, isolated rapidly rotating, neutron stars). The main aim is to introduce the key ideas and highlight issues that need further attention if we want to realize the potential of the next generation of gravitational-wave instruments.

Primary author: Prof. ANDERSSON, Nils (University of Southampton)

Presenter: Prof. ANDERSSON, Nils (University of Southampton)

Session Classification: Neutron Stars in Gravitational Wave Physics