Contribution ID: **180** Type: **Oral Presentation**

Fast Rotating Relativistic Stars: Spectra and Stability without Approximation

Wednesday 1 April 2020 17:30 (15 minutes)

The oscillations and instabilities of relativistic stars are studied by taking into account, for the first time, the contribution of a dynamic space-time. The study is based on the linearised version of Einstein's equations and via this approach the oscillation frequencies, the damping and growth times as well as the critical values for the onset of the secular (CFS) instability are presented. The ultimate universal relations for asteroseismology are derived which can lead to relations involving the moment of inertia and Love numbers in an effort to uniquely constrain the equation of state via all possible observables. The results are important for all stages of neutron star's life but especially to nascent or post-merger cases.

Author: Dr KRUEGER, Christian (University of Tuebingen)

Co-author: Prof. KOKKOTAS, Kostas (University of Tuebingen)

Presenter: Dr KRUEGER, Christian (University of Tuebingen)

Session Classification: Parallel 3B

Track Classification: General relativity, mergers and gravitational waves