

# NewCompStar School 2016 - “Neutron stars: gravitational physics theory and observations”



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## Introduction to NS Oscillations & Instabilities

*Friday, September 9, 2016 9:00 AM (1h 30m)*

This lecture provides a detailed discussion of gravitational wave-driven instabilities in neutron stars and highlights their implications for the photon and gravitational wave astronomy of these objects.

The emphasis is given on the analysis of the (most promising) r-mode and f-mode instabilities: we discuss the, occasionally exotic, physics that determines their instability “windows”, the role they may play in the astrophysics of systems like accreting and newly formed neutron stars (or strange stars), and the prospects for detection by present and future gravitational wave observatories.

The lecture concludes with a list of key theory assignments/open issues in this research topic.

**Presenter:** Dr GLAMPEDAKIS, K. (University of Tuebingen)