

We will present the results of our latest work on the oscillations and instabilities of fast rotating neutron stars, studied for the first time without any approximation (e.g. slow-rotation or Cowling). We will discuss the conditions under which the instability sets in and the detectability of the emitted gravitational waves. Finally, we will present the revised versions of asteroseismological relations relating the observables (frequencies and damping/growth times) with the parameters of the neutron stars.