

The Structure and Signals of Neutron Stars, from Birth to Death



Contribution ID: 95

Type: **not specified**

Magnetic fields and r-modes in slowly rotating relativistic neutron stars

Friday 28 March 2014 17:05 (20 minutes)

We study here the r-modes in the Cowling approximation of a slowly rotating and magnetized neutron star with a poloidal magnetic field, where we neglect any deformations of the spherical symmetry of the star. We were able to quantify the influence of the magnetic field in both the oscillation frequency of the r-modes and the growth time of the gravitational radiation emission. We conclude that magnetic fields of the order 10^{15} G at the center of the star are necessary to produce any changes.

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Session Classification: Evening session - Parallel A