

Abstract Submitted
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Bulk viscosity for high amplitude oscillations and its effect on spin-down evolution of compact stars SIMIN MAHMOODIFAR, MARK G. ALFORD, KAI SCHWENZER, Washington University in St. Louis — I will present our results for the bulk viscosity of dense matter taking into account non-linear effects that arise in the supra-thermal regime, $\Delta\mu \gg T$, where the bulk viscosity grows with the oscillation amplitude. This regime is relevant to unstable modes such as r-modes in neutron stars, which grow in amplitude until saturated by non-linear effects. Then I will discuss the effects of the high amplitude bulk viscosity on damping of the r-modes and spin-down evolution of rapidly rotating compact stars. I will present our results for different cases of hadronic stars and strange stars.

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