Poster Session #E
Astrophysics and Gravitational Waves

E10

Wavefronts of gravitational waves partially trapped in ultracompact stars

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Using a standard first-order perturbation theory (Teukolsky's equation) but expressed in a conformally scalled "optical geometry", we derive, for the first time, analytic formulae describing gravitational waves partially trapped inside constant density ultracompact stars – in particular frequencies and wavefunctions of their normal modes, and their damping ("ringdowns") and echoes. They are qualitatively different from those corresponding to the black hole case. This has direct consequences for interpretation of the the LIGO-Virgo data.
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