

A way to distinguish very compact stellar objects from black holes

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We propose a way to distinguish compact stellar object, whose size is very close to its Schwarzschild radius, from the collapsing stars. Namely, we show that $\{it\}$ massive fields in the vicinity of a very compact stellar object have discrete energy levels. (These levels are different from the standard non-relativistic ones present in Coulomb type of potentials and from the quasinormal modes.) At the same time we show that there are no such discrete levels for massive fields in the vicinity of a collapsing star.