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Revisiting astrophysical bounds on continuous spontaneous localization models

Among the open problems in fundamental physics, few are as conceptually significant as the "measurement problem"in Quantum Mechanics. One of the proposed solutions to this problem is the Continuous Spontaneous Localization (CSL) model, which introduces a non-linear and stochastic modification of the Schrödinger equation. This model incorporates two parameters that can be subjected to experimental constraints. One of the most notable consequences of this theory is the spontaneous heating of massive objects; this anomalous heating is dependent on the CSL parameters. In this work, we will revisit some astrophysical bounds previously found, and introduce new methods for testing the spontaneous heating in a variety of compact objects. Finally, we will compare our different bounds and discuss the benefits and shortcomings of each one.

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