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Testing Theories of Gravity by GINGER Experiment

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Many efforts are devoted to probe theories of gravity by Earth and space-based experiments at ultraviolet and infrared scales. In this debate, we propose straightforward tests by the GINGER experiment, which, being Earth based, requires little modeling of external perturbations, allowing a thorough analysis of the systematics, crucial for experiments where sensitivity breakthrough is required. Specifically, we show that it is possible to constrain parameters of gravity theories, like scalar-tensor or Horava-Lifshitz gravity, by considering their post-Newtonian limits matched with experimental data. In particular, we use the Lense-Thirring measurements provided by GINGER to find out
relations among the parameters of theories.

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