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Gravitational tests of the Generalized Uncertainty Principle

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We compute the corrections to the Schwarzschild metric necessary to reproduce the Hawking temperature derived from a Generalized Uncertainty Principle (GUP), so that the GUP deformation parameter is directly linked to the deformation of the metric. Using this modified Schwarzschild metric, we compute corrections to the standard General Relativistic predictions for the light deflection and perihelion precession, both for planets in the solar system and for binary pulsars. This analysis allows us to set bounds for the GUP deformation parameter from well-known astronomical measurements.

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