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Predictions of the pseudo-complex theory of gravity for EHT observations: Observational tests

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A modified theory of gravity, avoiding singularities in the standard theory of gravitation, has been developed by Hess \& Greiner, known as the pseudo-complex theory of gravitation. The pc-GR theory shows remarkable observational differences with respect to standard GR. The intensity profiles are significantly different between both theories, which is a rare phenomenon in astrophysics. This will allow robust tests of both theories using Event Horizon Telescope (EHT) observations of the Galactic Center. We also predict the time evolution of orbiting matter. In this paper we summarize the observational tests we have developed to date. In case that the EHT data are public, we will discuss their implication on the pc-GR theory.

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