

BLACK HOLES IN DENSE STAR CLUSTERS
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POSTER TITLE: Relativistic Orbits in the Galactic Center and General Relativity Tests with Gravity

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Is there a Kerr black hole at the center of our Galaxy? This is one of the issues the instrument GRAVITY will try to address in the near future. GRAVITY is a near-infrared interferometer which will be installed at the VLT. It is expected to reach an astrometric accuracy of $10 \mu\text{as}$. The aim of my PhD is to develop an apparent relativistic orbits model in order to test the no-hair theorem. To do so, I use the ray-tracing code named GYOTO developed at Observatoire de Paris by Frédéric Vincent, Thibaut Paumard, Eric Gourgoulhon and Guy Perrin. To ensure that GYOTO generates small numerical noises and use this ray-tracing code to get the future model, I studied lens effects such as primary caustics and critical curves.