

Prospects for testing gravity with pulsars around Sagittarius A*

Friday, 31 May 2024 18:10 (5 minutes)

Future observation with next-generation large-area radio telescopes are expected to discover radio pulsars closely orbiting around Sagittarius A (*Sgr A*), the supermassive black hole (SMBH) in our Galactic Center (GC). Such a system can provide a unique laboratory for testing gravity theories, as well as the astrophysics around the GC. We will introduce our recent studies about prospects for using the SMBH-pulsar system to test gravity. Including testing the no-hair theorem in General Relativity, constraining the vector charge of *Sgr A*, *probing the small-scale dark matter distribution around Sgr A* and so on.

Paper info

arxiv:2312.01889; arxiv:2312.02486

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Session Classification: Poster session and dinner