Poster Session #C
Gravity theories

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Shadows and precession in the black hole and naked singularity spacetimes

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It is now known that the shadow is not only the property of a black hole, it can also be cast by other compact objects like naked singularities, gravastars, etc. However, there exist some novel features of the shadow of the naked singularities which are elaborately discussed in some recent articles. In the earlier literature, it is also shown that a naked singularity may admit negative precession of bound timelike orbits which cannot be seen in Schwarzschild and Kerr black hole spacetimes. This distinguishable behavior of timelike bound orbit in the presence of the naked singularity along with the novel features of the shadow may be useful to distinguish between a black hole and a naked singularity observationally. However, in this talk, I will explain that deformed Kerr spacetime can allow negative precession of bound timelike orbits when the central singularity of that spacetime is naked. I will also show that negative precession and shadow both can exist simultaneously in deformed Kerr naked singularity spacetime. Therefore, any observational evidence of negative precession of bound orbits, along with the central shadow may indicate the presence of a deformed Kerr naked singularity.