

BENEMÉRITA UNIVERSIDAD AUTÓNOMA DE PUEBLA INSTITUTO DE FÍSICA

“Ing. Luis Rivera Terrazas”



SEMINARIO SEMANAL
“Jesús Reyes Corona”

“Black hole shadows and relativistic jets as laboratories to test the theory of gravity, and plasma models”

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Black hole shadows and relativistic jets as laboratories to test the theory of gravity, and plasma models. Relativistic jets are launched in the vicinity of black holes by the Blandford-Znajek process, and emit powerful radiation across the electromagnetic spectrum. The numerical simulations have shown that the amount of magnetic flux accreted onto the black hole plays a crucial role in the formation of these relativistic jets. In this talk, I will present an investigation of the radiative signatures of self-consistently launched relativistic jets using 3D general relativistic magneto-hydrodynamical (GRMHD) simulations and general relativistic radiative transfer (GRRT) calculations. We will discuss the effects of using different theories of gravity and non-Kerr solutions to describe a black hole, the effects of the magnetic field strength, as well as the thermodynamic properties of the plasma, such as electron temperature and electron distribution function within the jet. We use the synthetic images of shadows and relativistic jets with the observations to constraint the models and parameters

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