

Dark Matter reconstruction from stellar orbits in the Galactic Centre

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The continuous monitoring of stellar orbits in the Galactic Centre over the past few decades revealed the massive central object Sgr A at their shared focal point (\rightarrow Nobel prize 2020). These and other observations (orbits of hot flares, black hole shadow) are in best agreement with the notion of Sgr A being a massive black hole of about 4 million solar masses. Assuming the black hole model, the orbit of the star S2 (also S-02) also allowed for the observation of relativistic effects (gravitational redshift, Schwarzschild precession).

While we currently do not see any matter between the innermost known S-stars (e.g. S2) and the accretion disk,

In my talk I will first summarise some recent theoretical results as well as observational upper bounds on

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