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## Jean-Baptiste Fouvry (IAP): Stellar dynamics in galactic nuclei and constraining intermediate mass black holes around SgrA\*

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Most galaxies harbor a supermassive black hole in their centre around which orbits a stellar cluster, the galactic nucleus. The unique proximity of the Milky-Way's central black hole, SgrA, offers an extraordinary opportunity to study such a crowded environment. Although galactic nuclei are among the densest stellar systems in the universe, the steep potential well generated by the central black hole allows for efficient orbital interactions between the stars. Ultimately, this drives the relaxation of the stellar orbits through an intricate hierarchy of dynamical processes. In this presentation, I will focus on two such processes: scalar resonant relaxation through which the stellar orbital eccentricities relax, and vector resonant relaxation through which the stellar orbital orientations get reshuffled. For both processes, I will report on recent developments in kinetic theory to model these dynamics, and will present first quantitative applications of these frameworks to constrain the possible presence of intermediate mass black holes around SgrA

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