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The Galactic centre: a unique astrophysical target

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We live at the edge of our Galaxy, in a relatively quiet place. The Galactic centre, 26500 light years away from us, is a much more extreme environment. It is the most active star formation nursery of the entire Galaxy, creating approximately one new star every ten years. It hosts a giant cigar-shaped structure known as the Galactic bar, which is responsible for creating traffic jams in the interstellar medium and extreme collisions between giant molecular clouds. The bar is also responsible for creating a remarkable ring-like accumulation of molecular gas known as the Central Molecular Zone (CMZ) at a radius of R=300 light years, via a process similar to the one responsible for creating gaps in Saturn's rings. At its centre lies the supermassive black hole SgrA*, that is usually dormant but occasionally awakens to power strong Galactic winds.

In the first part of the talk, I will give an introduction to the structure and dynamics of the Galactic centre. In the second part of the talk, I will introduce the ERC project "GalFlow", that aims to use the centre of the Milky Way as a template to solve the long-standing problem of the inward transport of gas towards the centre of galaxies.

