

Formation of large-scale galactic winds

The formation of galactic winds, driven by feedback processes associated with supernova explosions and active galactic nuclei, remains a central problem in astrophysics that has been actively debated for several decades. Despite significant progress, the physical mechanisms responsible for launching and sustaining these outflows are still not fully understood or well constrained.

These winds play a key role in galaxy evolution by regulating their gas content and star formation activity. They can operate through different channels: either by efficiently expelling gas out of the gravitational potential, or by suppressing gas accretion, thereby limiting the supply of fresh material.

In this presentation, I will provide a theoretical perspective on this problem, with a focus on recent advances from numerical simulations. I will discuss the main driving mechanisms, as well as the different approaches currently being explored by the community to model and constrain this phenomenon.