Turbulence in the interstellar medium: from intermediate galactic scales to self-gravitating cores

Patrick Hennebelle (AIM)

Turbulence is playing a fundamental role in galaxies. In particular, it contributes to regulate the star formation rate and seeds together with gravity, the mass reservoir from which the stars built their mass. It is also likely playing a fundamental role regarding other processes such as magnetic field, cosmic rays and chemistry. In the talk, I will review the various observational evidences which probe this turbulence and discuss the numerical simulations which have been performed to understand its characteristics. I will then review the attempts to provide a global modelling of the interstellar medium from the kpc to the sub-parsec ones.