

Modelling the Milky Way in the Gaia era

Thanks to data from the Gaia mission and complementary spectroscopic surveys, we have access to an unprecedented amount of data on our Galaxy and others in the Local group. Interpreting this data requires the development of models and numerical simulations to shed light on the complexity of the processes at work in the evolution of a galaxy like ours. In this talk, I will present some of our ongoing work, from hydrodynamic simulations of the inner regions of our Galaxy, to models of the formation and evolution of stellar streams around open and globular clusters, to new approaches for post-processing cosmological simulations to model the evolution of globular cluster systems. I will discuss the successes and limitations of each of them, as well as their future prospects.