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## Dark matter spirals in Milky Way-like galaxies

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In the study of the dynamics of the Milky Way, a traditional assumption is that the inhomogeneities of the disk are decoupled from the dark matter halo. However, the complex kinematics revealed by Gaia show that the disk-halo interaction could play a much more important role than we imagined in the understanding of our Galaxy.

In this talk, we will discuss the coupling between the spiral arms and the dark matter halo of simulated Milky Way-like galaxies. We will show its ubiquitous presence for spiral arms with different origins in pure N-Body and cosmological simulations. Additionally, we present a possible explanation for this coupling, in the framework of Dynamical Friction.

Finally, we will discuss the impact of this coupling in the dynamics and evolution of spiral arms and the possible impact on the estimations of local dark matter density.

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