

## Effective interactions and ordered phases in active systems

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I will discuss the interactions between passive inclusions in an active suspension, where passive particles couple to the active suspension and quickly react to the active particles rearrangements. Hence, their relative dynamics plays an important role in the features that characterize the emergent interactions among the inclusions. Moreover, for systems where active particles develop long range polar order, the presence of passive obstacles triggers spontaneous macroscopic structures that give rise to non-reciprocal interactions. I will also discuss the susceptibility of polar active systems to small inclusions and the implications this has on the nature of their ordered phases.