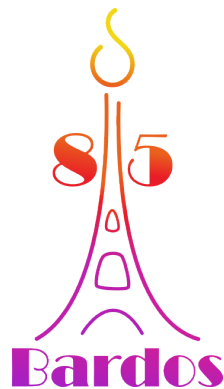


Kinetic equations and turbulence

The emergence of entropy solutions for Euler alignment equations

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The hydrodynamic description for emergent behavior of interacting agents is governed by Euler alignment equations, driven by different protocols of pairwise communication kernels. We survey recent results in Euler alignment dynamics with emphasis on the multi-dimensional setting. A distinctive feature of alignment dynamics is the reversed direction of entropy. We discuss the role of a reversed entropy inequality in selecting mono-kinetic closure for emerging strong alignment solutions, we prove the existence of such solutions, and we characterize their related invariants which extend the 1-D notion of an “e” quantity.



In honor of Claude Bardos's 85th birthday