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Consensus in evolving networks of mobile agents ANDREA BARONCHELLI, Universitat Politecnica de Catalunya, ALBERT DÍAZ-GUILERA, Universitat de Barcelona — Populations of mobile and communicating agents describe a vast array of technological and natural systems, ranging from sensor networks to animal groups. Here, we investigate how a group-level agreement may emerge in the continuously evolving networks defined by the local interactions of the moving individuals. We adopt a general scheme of motion in two dimensions and we let the individuals interact through the minimal naming game, a prototypical scheme to investigate social consensus. We distinguish different regimes of convergence determined by the emission range of the agents and by their mobility, and we identify the corresponding scaling behaviors of the consensus time. In the same way, we rationalize also the behavior of the maximum memory used during the convergence process, which determines the minimum cognitive/storage capacity needed by the individuals. Overall, we believe that the simple and general model presented in this talk can represent a helpful reference for a better understanding of the behavior of populations of mobile agents.

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