

A MEAN-FIELD OPINION MODEL: FROM MODELING TO INFERENCE

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Abstract: The perspectives and opinions of people change and spread through social interactions on a daily basis. In the study of opinion dynamics on social networks, one often models social entities (such as twitter accounts) as nodes and their relationships (such as followship) as edges, and examines how opinions evolve as dynamical processes on networks, including graphs, hypergraphs, multi-layer networks, etc. I will introduce a model of opinion dynamics and derive its mean-field limit as the total number of agents goes to infinity. The mean-field opinion density satisfies a kinetic equation of Kac type. We prove properties of the solution of this equation, including nonnegativity, conservativity, and steady-state convergence.