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*Modeling and simulation of multiscale crowd dynamics with emotional contagion*

We developed a hierarchy of models to study the crowd dynamics coupled with emotion. The model involves movement with a speed proportional to a fear variable that undergoes a temporal consensus averaging based on distance to other agents. In the continuum limit, we observe a threshold for the the interaction distance vs. interaction timescale that produce qualitatively different behavior for the system - in one case particle paths do not cross and there is a natural Eulerian limit involving nonlocal interactions and in the other case particle paths can cross and one may consider only a kinetic model in the continuum limit. We also designed efficient numerical methods to couple the kinetic and continuum models in a multiscale setting.