

DY 17: Networks I (with SOE)

Time: Wednesday 9:30–10:15

Location: H 0110

Invited Talk

DY 17.1 Wed 9:30 H 0110

Adaptive Networks of Opinion Formation in Humans and Animals — •THILO GROSS — University of Bristol, Department of Engineering Mathematics, Merchant Venturers School of Engineering, Bristol, UK

A central challenge in socio-physics is understanding how groups of self-interested agents make collective decisions. For humans many insights in the underlying opinion formation process have been gained from network models, which represent agents as nodes and social contacts as links. Over the past decade these models have been expanded to include the feedback of the opinions held by agents on the struc-

ture of the network. While a verification of these adaptive models in humans is still difficult, evidence is now starting to appear in opinion formation experiments with animals, where the choice that is being made concerns the direction of movement. In this talk I show how analytical insights can be gained from adaptive networks models and how predictions from these models can be verified in experiments with swarming animals. The results of this work point to a similarity between swarming and human opinion formation and reveal insights in the dynamics of the opinion formation process. In particular I show that in a population that is under control of a strongly opinionated minority a democratic consensus can be restored by the addition of uninformed individuals.