

Nikolai Bode

UNIVERSITY OF YORK

e-mail: nwfb500@york.ac.uk

Social networks and models for collective motion

The theory of collective motion and the study of social networks have, each individually, received much attention. Currently, most models of collective motion do not consider social network structure. The implications for considering collective motion and social networks together are likely to be important. Social networks could determine how populations move in, split up into and form separate groups (social networks affecting collective motion). Conversely, collective movement could change the structure of social networks by creating social ties that did not exist previously and maintaining existing ties (collective motion affecting social networks). Thus, there is a need to combine the two areas of research and examine the relationship between network structure and collective motion. I will briefly review different modelling approaches that combine social network structures and collective motion (e.g. in pedestrian crowds or evacuation scenarios) and present examples of my own work suggesting how social networks could impact on positioning and leader-follower relationships within groups and navigation at the group level.