

Collective feeding in *C-elegans*

Collective behaviour is frequently studied in groups of large animals but is less well understood in small organisms and at mesoscopic scales. Here we investigate the collective feeding behaviour of the nematode worm *C. elegans*, well known for its easy genetic manipulability and stereotypic, yet complex behaviour. By tracking many worms and probing the dynamics inside aggregates with fluorescent imaging we quantify behavioural differences between the “asocial” lab strain, “social” wild isolates, and an aggregating mutant strain. Drawing on concepts from motility-induced phase transitions in active matter and bacterial systems, we interrogate the mechanism of aggregation by quantitative analysis of tracking data and computational modelling of worm movement. Our study elucidates how small genetic differences affect the emergent phenotypes of group behaviour, and how social information flows from individuals to the population.