

Introduction for the lecture by Guy Theraulaz.

The introductory lecture focuses on how coordinated motion emerges. It starts out from a description of various systems like collections of motile microorganisms, animal flocks, or man-made imitations, spanning all sizes from microscopic to macroscopic. We then review recent work aiming at a unifying classification of the systems in terms of symmetries and conservation laws. Assemblies with high communication skills like ant and termite colonies will not be addressed in this introduction.

M.C. Marchetti et al., *Reviews of Modern Physics*, vol. 85, (2013).

Antoine Bricart et al., *Nature* 503, p.95 (2013).

Khanh-Dang Nguyen Thu Lam et al., *New J. Phys.* 17 (2015) 113056.