

Abstract

The aim of the project is to understand active systems and model them subsequently. In active matter, particles use stored or ambient energy to perform systematic movement. To quantify the dynamical organization of active matter, we review agent based models (Vicsek) as well as coarse grained hydrodynamic description (Toner-Tu) of these systems. We also review liquid crystal physics to better understand the liquid crystalline orders observed in active matter. We then discuss a stochastic lattice gas model which successfully describes an active system.