Abstract

Energy methods in chemotaxis models.

The main question arising from chemotaxis models is whether cell density blows up or not in finite time. Particularly in dimension two, this behavior is subject to a mass threshold. Methods based on the corresponding free energy provide a good understanding of such systems.
In this talk we present two extensions of the classical linear Keller–Segel model, by changing respectively equations driving the cell density and the chemical potential. For both models we show how the free energy method brings optimal results concerning the prevention of blow–up.