

1124-65-227

Qi Wang* (qwang@math.sc.edu), Dept of Math, Columbia, SC 29063-9297, **Xueping Zhao**,
Dept of Math, Columbia, SC 29208, and **Jia Zhao**, Chapel Hill, NC 27599. *Active matter models
and their applications to cell motility.*

Active matter includes cytoskeleton of an eukaryotic cell. Modeling and simulation of active matter is an emerging research field. Models at microscopic, mesoscopic and macroscopic scales have been developed to study the active matter system. In this talk, I will give an overview on how to derive active matter models using the generalized Onsager principle. Then, I will discuss a simple active model and its mathematical properties when applied to simple geometries. Then, I will present some multiphase field models for cell motility. Numerical treatment of the models and predictions will be discussed as well. (Received September 09, 2016)