

## **Hydrodynamic limit for Doi-type systems**

(Alexandre Girodroux-Lavigne)

We study the Doi-Saintillan-Shelley model for active Brownian rod-like particles in a suspension. In a regime of small Weissenberg number, which corresponds to a fast rotational diffusion compared to the fluid velocity gradient, we derive at the limit an hydrodynamic approximation in the form of a classical non-Newtonian fluid model known as second order fluid model. This talk is based on an ongoing collaboration with Mitia Duerinckx, Lucas Ertzbischoff and Richard Höfer."