

**Jean-François Joanny**

PHYSICO-CHEMIE CURIE INSTITUT CURIE

e-mail: jean-francois.joanny@curie.fr

## **Cortical actin and cell instabilities**

Cortical actin and cell instabilities. JF Joanny, J. Prost, G. Salbreux

We present a review of our work on cortical actin and of the instabilities of cells induced by cortical actin. We first show how we can apply our active gel theory to describe the properties of the acti-myosin cortex in a cell. We then discuss the stability of the cortical actin layer. The results are applied to three problems: the formation of blebs to discuss the experiments of the group of E. Paluch in Dresden where the blebs are induced by photoablation; oscillations of non adhering cells to discuss the experiments of the group of P. Pullarkat in Bangalore; and the formation of contractile rings. In this last case, we discuss both wound healing formation in a xenopus embryo and the formation of a contractile ring during cytokinesis