



ESPCI
Laboratoire PMMH
10 rue Vauquelin, 75231 Paris Cedex 05



Séminaire PMMH

Bureau d'Études, Bâtiment L, 2^{ème} étage

Vendredi 18 avril 2014, 11h00-12h00

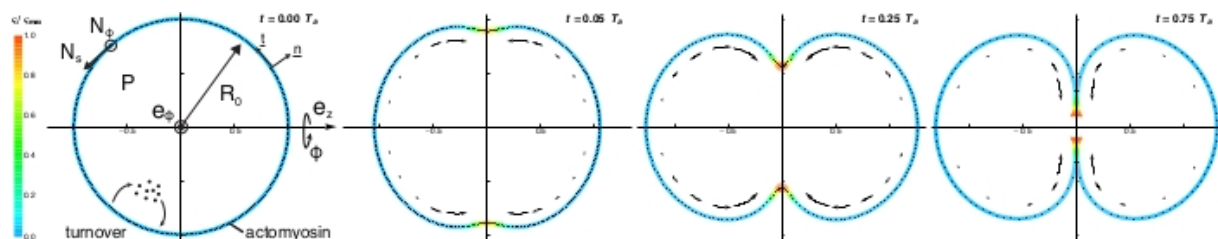
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ESPCI

Cortical actin layers and cytokinesis dynamics

In this talk, we discuss first the properties of the actin cortical layer in contact with the plasma membrane of a cell using the hydrodynamic theory of active gels : within this framework, the cortical layer can be viewed as an active prewetting layer. We also discuss the dynamical properties of the layer and the interaction between two cortical layers that could be relevant for the formation of a lamellipodium.

We then discuss cytokinesis which is last stage of cell division when the two daughter cells separate. Cytokinesis proceeds by the formation of an actin contractile ring at the equator of the cell and by contraction of this ring. The ring formation induces tension gradients in the cortical layer and a cortical flow. Using active gel theory, it is shown numerically that cytokinesis can only be completed if the activity gradient is large enough and that the radius of the contractile ring decreases linearly with time in agreement with experiments.



Prochain séminaire : Vendredi 25 avril, 11h00-12h00, Gareth McKinley (MIT)
Programme des séminaires : www.pmmh.espci.fr, onglet *Séminaires PMMH*
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