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Laboratoire PMMH  
10 rue Vauquelin, 75231 Paris Cedex 05



## Séminaire PMMH

*Bureau d'Études, Bâtiment L, 2<sup>ème</sup> étage*

*Vendredi 24 avril 2015, 11h00-12h00*

### David Gonzalez-Rodriguez

LadHyX, École Polytechnique

#### Biofluid Mechanics at the Subcellular Scale

In this talk I will present two problems in cell mechanics where insight is gained through analogies with surface-tension-driven flow.

First I will discuss how endothelial cells can oppose the opening of transcellular tunnels that are induced by certain bacterial infections. The experimentally observed dynamics of tunnel opening can be explained through an analogy with viscous liquid dewetting.

Next I will discuss mitochondrial shape dynamics, a question of major biological importance, since disruption of mitochondrial morphology has been linked to neurodegenerative diseases. We experimentally observe that a mechanical perturbation induces a topological change in mitochondria, which fission from a tubular shape into a collection of spherical fragments. This shape change can be interpreted as an elasto-capillary instability, thus suggesting a role for mechanics in the regulation of mitochondrial morphology.

**Attention : pas de séminaires les Vendredi 1er et 8 et 15 mai**

Prochain séminaire : vendredi 22 mai, Sylvain Courrech du Pont (MSC)

Programme des séminaires : [www.pmmh.espci.fr](http://www.pmmh.espci.fr), onglet *Séminaires PMMH*

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