ESPCI
Laboratoire PMMH
10 rue Vauquelin, 75231 Paris Cedex 05

Séminaire PMMH

Bureau d'Études, Bâtiment L, 2 ème étage

Vendredi 24 mars 2017, 11h00-12h00

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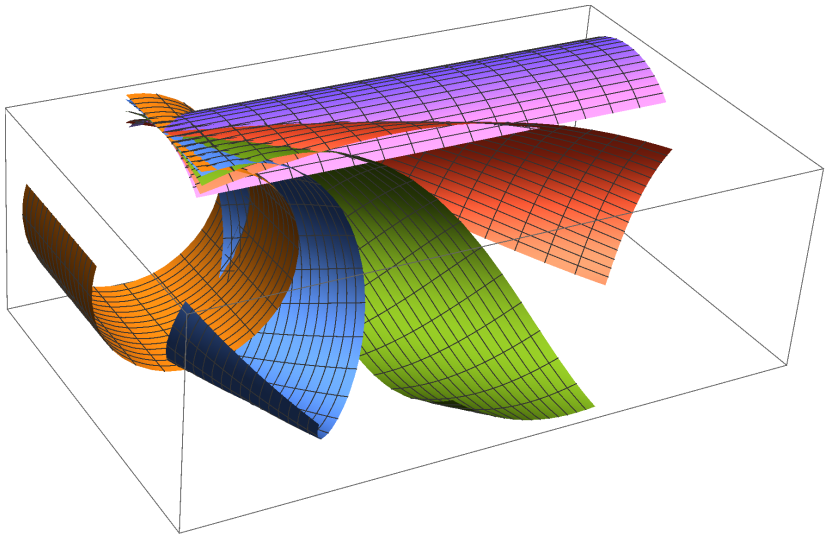
On shape control : some case studies inspired by biological and bio-inspired locomotion at small scales

Control of shape is at the root of many processes of fundamental relevance in Biology, from morphogenesis to locomotion.
For slender one-dimensional objects (rods) or thin two-dimensional ones (plates and shells), shape can be controlled by adjusting curvature thanks to the application of active internal stresses. These may result from biological agents (molecular motors), from spontaneous distortions triggered by phase transitions, from swelling due to solvent absorption, from growth or thermal distortions, etc.
We will report on a few case studies, inspired by biological locomotion (undulating snakes, metaboly in euglenids, which is a family of unicellular swimmers), in which the problem of shape control is first analysed through mathematical models, and then reproduced in simple desk-top experiments.



Prochain séminaire : vendredi 31 mars, Alexandre Danescu (Ecole Centrale Lyon)
Programme des séminaires : www.pmmh.espci.fr, onglet *Séminaires PMMH*
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