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EDUCATION SCIENCE INNOVATION

## Séminaire café - PMMH

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

*Jeudi 07 septembre 2017, 13h30*

### Emmanuel Siefert

Doctorant au PMMH

#### **Baromorphs - Dynamical bioinspired shape-morphing**

A pneumatic network of millimetric channels is embedded into elastomer plates. Upon inflation or suction, initially planar sheets destabilize into 3D shapes with non-zero Gaussian curvature. The air pressure in the channels induces anisotropic strains which leads to variations in the metric of the plate and triggers buckling. The coupling of pressure driven pneumatic networks with mechanical instabilities of plates is used to design structures with programmed 3D shapes, which can be actuated and deactivated on demand in typically one second. Combined experimental measurements and theoretical minimal model allow us to rationalize, predict and program the pressure dependent shapes obtained.

Prochain séminaire : jeudi 14 septembre 2017 à **13h30**,  
Charles Duchêne (doctorant au PMMH).

Programme des séminaires café : <https://www.pmmh.espci.fr/?-Seminaire-Cafe-Interne->  
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