

Séminaire LIONS



Jeudi 6 Décembre à 11h00, pce. 157, bât. 125

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Solidification of colloidal suspensions: observations, control and use

The freezing of colloids is an amazingly common phenomenon encountered in many natural and engineering processes such as the freezing of soils, food engineering or cryobiology. It can also be used as a bioinspired, versatile and environmentally-friendly processing route for bioinspired porous materials and composites exhibiting breakthroughs in functional properties. Yet, it is still a puzzling phenomenon with many unexplained features, due to the complexity of the system, the space and time scales at which the process should be investigated and the multidisciplinary approach required to completely apprehend it.

I will summarize our work to progress towards a deep understanding and control of the freezing of colloids, in particular through novel in situ observations. Strategies borrowed from work in geophysics, cryobiology or colloidal self-assembly can provide innovative control of the freezing process and the derived structures and open new opportunities in these domains.