

Séminaire du SPEC
Mercredi 6 juin 2007, 11h00

Bt. 774 - Salle Claude ITZYKSON
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**Interactions and dynamics of charged colloidal
particles at aqueous interfaces**

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Charged colloidal particles dispersed at aqueous interfaces are stabilized by the Coulomb repulsion between the induced out-of-plane dipoles due to the asymmetric distribution of counter-ions in the aqueous phase. Recent experiments indicate that the interfacial particles also experience attractive interactions, but the origin of such attractions remains illusive. Because of its fundamental interest and important implications in colloid science and biology, the paradox of like-charge attractions has been under intensive theoretical scrutiny for many years. In this talk, I will review the recent development in the area and report our recent experimental results of an optical and atomic force microscopic (AFM) study of interactions between charged polystyrene spheres [1] and between weakly charged silica spheres at the water-air interface.

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[1] Long-ranged attraction between charged polystyrene spheres at aqueous interfaces, W. Chen, S.-S. Tan, T.K. Ng, W.T. Ford, and P. Tong, Phys. Rev. Lett. 95, 218301 (2005); Phys. Rev. E 74, 021406 (2006).

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