Freie Universität Berlin

Bio-Soft-Matter Special Seminar

In the frame of our Seminar there will be a talk by

Prof. Rudolf Podgornik
Faculty of Mathematics and Physics
University of Ljubljana,Slovenia

Kirkwood-Schumaker forces and monopolar thermal Casimir interactions

Time: Wednesday, November 13, 2013, 16:00

FU Berlin, Physics Department, Arnimallee 14

Seminar Room T 3 (1.3.48)

Abstract:

I will present a theory of fluctuation interactions between charge-regulated surfaces, i.e. surface or colloidal particles that have a charge responding to the local electrostatic potential. Proteins would be a prime example of such systems. I will show that the well known Kirkwood-Schumaker interaction corresponds to the thermal Casimir (zero frequency van der Waals) interaction for this kind of surfaces. While usually fluctuation interactions are subdominant to the mean field interaction, here this need not be the case, because close to the isoelectric point the mean field interaction vanishes and fluctuations dominate.

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