

## Particle Transport by Nanoflows

A. Dominguez<sup>C, S</sup> and S. Dietrich

*Max-Planck-Institut für Metallforschung, Stuttgart, Germany*

We study the transport of colloidal particles by flows at the submicrometer scale, such as in wetting films or in nanotubes. Standard Navier-Stokes equations are employed, supplemented by a volumetric potential for the London-van der Waals dispersion forces. A non-vanishing slip length at solid boundaries is taken into account. Although thermal fluctuations are noticeable at these small scales, this "mean-field" model provides a correct description of certain adsorption phenomena observed in MD simulations. It is expected that further improvements, such as the inclusion of depletion forces, will extend the validity of the model.