



# The Physics of Soft and Biological Matter

## P.14 Dynamic properties of concentrated microgel suspensions and protein solutions

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Microgel suspensions and protein solutions exhibit interesting dynamical behavior, reflected in transport properties such as the generalized sedimentation and self-diffusion coefficients, and the viscosity. These properties are determined by the interplay of direct and hydrodynamic interactions. Using a simple spherical annulus model to account for solvent permeability, we have calculated analytically the hydrodynamic function of neutral microgel suspensions [1], in good agreement with experimental data [2]. We also present results for the self-diffusion coefficient and viscosity in comparison with simulations [3].

In addition, we use our analytic toolbox to study the effect of competing short-range attractive and longrange repulsive interactions on the dynamic clustering of globular protein solutions [4]. We study in particular diffusion properties, and the high-frequency viscosity.

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