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**Yielding and flow of soft particle dispersions: the role of elasto-hydrodynamic interactions.** MICHEL CLOITRE, Matière Molle et Chimie (UMR ESPCI-CNRS 7167), ESPCI, 10 rue Vauquelin, Paris, France, JYOTI SETH, ROGER BONNECAZE, Department of Chemical Engineering and Texas Materials Institute, The University of Texas at Austin, Austin, Texas 78172, USA — Concentrated dispersions of soft particles such as emulsions, colloidal pastes and granular suspensions exhibit many fascinating phenomena such as yielding, shear thinning, aging and memory, slip and fracture. Elucidating the physical parameters controlling these properties and the mechanisms at work is a formidable challenge. Recently we have found that various soft particle pastes share in common universal flow properties that can be characterized with very simple constitutive equations involving the solvent viscosity, the bulk elasticity and geometrical factors. We shall describe a generic flow model based on internal slip and non-contact elasto-hydrodynamic forces between squeezed particles<sup>1</sup> that quantitatively accounts for the measured properties. This approach offers new routes to predict the bulk non-linear rheology of pastes. <sup>1</sup>S.P. Meeker, R.T. Bonnecaze, M. Cloitre, *Phys. Rev. Lett.* **92**, n° 198302 (2004).

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