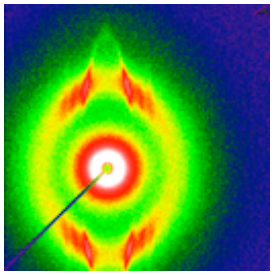

Contribution ID : **30** Type : **not specified**

Keynote 4 - Quantitative Light Microscopy of Dense Suspensions: Colloid Science at the Next Decimal Place

Monday, 10 December 2018 17:20 (40)

"Why should one wish to make measurements with ever increasing precision? Because the whole history of physics proves that a new discovery is likely to be found lurking in the next decimal place." (Floyd K. Richtmyer, 1931)

Since the days of Perrin, microscopy methods have played an important role in the study of colloidal suspensions. Along with the continued development of new imaging techniques, colloid scientists have also implemented a sophisticated range of computational analyses. These analysis techniques are often the unsung heroes that hold the promise of unlocking scientific mysteries at the next decimal place of colloid science. They now enable precision measurements of particle location and size with nm precision as well as measurements of local stresses and forces. Here, I spotlight exciting recent advances we have made focusing on the analysis of simple confocal microscope images of dense colloidal suspensions. I will then describe our plans for using these tools to unravel scientific mysteries ranging from yielding in glasses, training of colloidal gels, and the stress networks governing shear thickening flows.

Presenter(s) : Prof. COHEN, Itai (Physics, Cornell University, USA)

Session Classification : Later afternoon session - Colloids