CMP Seminar

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Clusters, cluster-mining, and teaching machines to study nanostructure

The recent developments in advanced atomic pair distribution function (PDF) methods is rapid, both on the experimental and modeling sides, and the insights we can gain about the structure of nanomaterials is rapidly changing. In this talk I will go over some of the more exciting recent developments with a special emphasis on structures of nanoparticles and atomic clusters. I will cover new modeling approaches that use large databases of candidate cluster structures. rather than conventional model fitting approaches, something we call cluster-mining. We have also extended PDF into the realm of quantitative modeling of nanoparticle superlattice assembly structures, can measure thin films and ink-jet printed arrays of nanoparticles, carry out in-situ experiments and look at nanograms of material. Finally, I will touch on how data analytics and machine learning can inform what we know about nanoparticle structure

Monday, January 20th, 2020 at 4:10 p.m.
Room: 1400 BPS Bldg.
Host: Carlo Piermarocchi