Conduction Amongst Mesoscopic Particles
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Abstract: Simulating the conduction of charge through a disordered network of small particles requires characterizing the junctions between each particle. For large smooth particles we can approximate the geometry of the junction with one that allows an analytic solution for the tunneling current. For particles smaller than ~1 nm, we can use first principles approaches such as density functional theory (DFT). In this work we use the above mentioned methods to gain insight into the behavior of junctions too large for DFT and too small to approximate with bulk properties.