Abstract Submitted
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Quantum-defect theory for ion-atom interactions[1] BO GAO, University of Toledo — We present a quantum-defect theory[2] (QDT) for ion-atom systems that provides a systematic understanding of ion-atom interaction over a wide range of energies that includes the cold and ultracold regime. Ion-atom bound spectrum, ion-atom scattering at ultracold temperatures including ultracold shape resonances and quantum reflection and tunnelling, can all be understood systematically within the QDT framework. We will give a flavor of the theory, with an emphasis on the universal spectra for ion-atom systems up to $l = 10$.

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[2]B. Gao, Phys. Rev. A **78**, 012702 (2008).

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