

Abstract Submitted
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Understanding

Generalized Coulomb Logarithms¹ PAUL GRABOWSKI, University of California, Irvine — The Coulomb logarithm is ubiquitous in plasma physics. For ideal classical plasmas, physically motivated simple formulas suffice, but in warm dense matter, low temperature, or high-density plasmas, these simple prescriptions break down. Recent work [P. Grabowski et al., *Phys. Rev. Lett.* **111**, 215002 (2013)] used classical molecular dynamics to understand how strong correlation should be treated in the electron-ion collision operator of a uniform electron gas. In this talk, I will quantify quantum and inhomogeneous corrections to this operator and present simple Coulomb logarithm formulas that are fit to calculations using convergent kinetic theories.

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Paul Grabowski
University of California, Irvine

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