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An Ellipsoidal Lenard-Bernstein Kinetic Model for Plasmas[1]
WILLIAM SANDS, Michigan State University, JEFFREY HAACK, Los Alamos National Laboratory — We extend the Lenard-Bernstein collision model, which is a linear Fokker-Planck collison model, to allow for anisotropy in the effective target distribution. Additionally, we incorporate MD-verified cross sections in the definitions of the collision frequency and transport coefficients to provide the fidelity of a Boltzmann model in the hydrodynamic limit. We perform a consistent numerical comparison of this model with other collision operators used in kinetic modeling of plasmas.

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