

Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Generalizations to the Generalized Kirchoff Law H.L. RAPPAPORT, Enig Associates — The generalized Kirchoff law¹ which facilitates the computation of thermal radiation from inhomogeneous plasmas is discussed in some detail. In this poster, the generalized Kirchoff law is derived from a test-particle formalism and the Lorentz reciprocity theorem. The symmetry of the equations describing wave propagation, be they fluid or kinetic, needed to find radiation from Kirchoff's law are shown explicitly. The roles played by plasma waves and equilibrium electric fields in this problem are examined. A method for overcoming the limitations of Kirchoff's law that arise from diffraction is given. A derivation of the test particle source function for electron-neutral collision processes from the master equation of statistical mechanics is also given.

¹Usenko, A.S., Phys. Rev. E, V. 58, No. 5. Nov. 1998, p. 6465.

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Date submitted: 15 Jul 2005

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