The development of a Krook model for nonlocal transport in laser produced plasmas I. Basic theory[1] WALLACE MANHEIMER, RSI, Landover, MD, DENIS COLOMBANT, Plasma Physics Division, Naval Research Laboratory, Washington, DC, VALERI GONCHAROV, LLE, University of Rochester, Rochester, NY — We examine the Krook model as a means of quantifying the problem of nonlocal transport of electron energy in laser produced plasmas. The result is an expression for the nonlocal electron energy flux q. The roles of both flux limitation and preheat are clearly delineated. Furthermore, it develops a test for the validity of this model. This is a physics based "first principles" model that can be economically incorporated into a fluid simulation.

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