Abstract Submitted
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Solutions for the velocity-dependent Krook (VDK) model using Helmoltz equations[1] DENIS COLOMBANT, Berkeley Research Associates, Beltsville, MD, WALLACE MANHEIMER, Research Support Instruments, Lanham, MD, ANDREW SCHMITT, Plasma Physics Division, Naval Research Laboratory, Washington, DC — Our previous treatment for the solutions of the VDK model involved the use of a Green's function [1]. We now solve directly the Helmoltz equation describing the model in 1D (and 2D as previously described in ref.2). This involves the numerical solution of a diffusion-like equation for each energy group in steady-state. We present comparisons between the two methods of solution on test problems and on one typical implosion calculation [2]. Sensitivity of the solution to the number of energy (velocity) groups is also presented since this is an important component affecting the total computing time for this model. Further work will also be discussed.

[1] W. Manheimer, D. Colombant and V. Goncharov, Phys. Plasmas **15**, 083103 (2008).
[2] W. Manheimer, D. Colombant and A.J. Schmitt, Phys. Plasmas **19**, 056317 (2012).

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