

Abstract Submitted  
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**Fokker Planck and Krook theory for energetic electron deposition in laser fusion**<sup>1</sup> WALLACE MANHEIMER, DENIS COLOMBANT, Retired — We have developed a Fokker Planck and Krook model to calculate the transport and deposition of energetic electrons, produced for instance by the two plasmon decay instability at the quarter critical surface of a laser produced plasma [1]. In steady state, the Fokker Planck equation reduces to a single universal equation in energy and space, an equation which whose asymptotic solution we calculate. The Krook theory also gives rise to an analytic expression solution. From each, one can calculate the spatially dependent heating of the interior plasma, which can be implemented at each time step in a fluid simulation. The equation is equally valid in planar and spherical geometry, and it depends on only a single parameter, the charge state  $Z$ . Hence one can solve for a universal solution, valid for each  $Z$ . the two approaches will be compared and discussed. We look to cooperate with anyone having a more advanced simulation capability, Direct Simulation Monte Carlo or Fokker Planck, who is willing to test our results.

[1] B. Yaakobi et al, Phys. Plasmas 19, 012704, 2012.

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