



## **Energy transfer between two crossed laser beams in a non-isothermal plasma for finite spot size**

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### **ABSTRACT**

The modeling of energy transfer between two laser beams for finite spot size crossing in plasma is presented. A high frequency and high amplitude pump wave transfers its energy to a low frequency low amplitude probe beam through the coupling with a difference frequency electrostatic mode/ quasimode in a plasma. The pump and probe beams driven by the ponderomotive force. The laser imparts an oscillatory velocity to electrons associated with electron density perturbation with the electrostatic mode due to the lasers produce nonlinear current densities. For solving the wave equations facilitating the energy transfer from the high frequency laser to the low frequency probe beam. Significant amount of energy transfer when the phase matching conditions are satisfied.

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