Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Mobile dust particle trajectories in NSTX[1] L. ROQUEMORE, PPPL, N. NISHINO, Hiroshima University, R. MAQUEDA, Nova Photonics, R. SMIRNOV, A. PIGAROV, S.I. KRASHENINNIKOV, UCSD, W. DAVIS, C.H. SKINNER, R. KAITA, PPPL — The transport of dust in plasmas may play a significant role in the performance of next-step fusion devices. [1]. Highly mobile incandescent dust particles are routinely observed on NSTX using fast visible cameras. The dynamics of the dust trajectories can be quite complex exhibiting a large variation in both speed (10-200m/s) and direction. Particles may have constant velocities or exhibit various degrees of acceleration or deceleration. Abrupt reversals in direction are sometimes observed while some of the larger particles are seen to break apart during mid-flight. Measurements of dust trajectories taken simultaneously from two observations points on NSTX with two different fast cameras are being used to derive 3D trajectories of the dust particles which are being compared to the dust transport code DUSTT[2]. Experimental results will be compared to the DUSTT predictions and implications for next-step devices will be discussed. [1] S.I. Krasheninnikov, Y. Tomita, R.D. Smirnov, R. K. Janev, Phys. Plasmas 11 (2004) 3141 [2] A. Yu. Pigarov et al., to be published in Physics of Plasmas (December 2005)

[1]Supported by US DOE Contract No. DE-AC02-76CH03073.

L. Roquemore
PPPL

Date submitted: 24 Jul 2006 Electronic form version 1.4