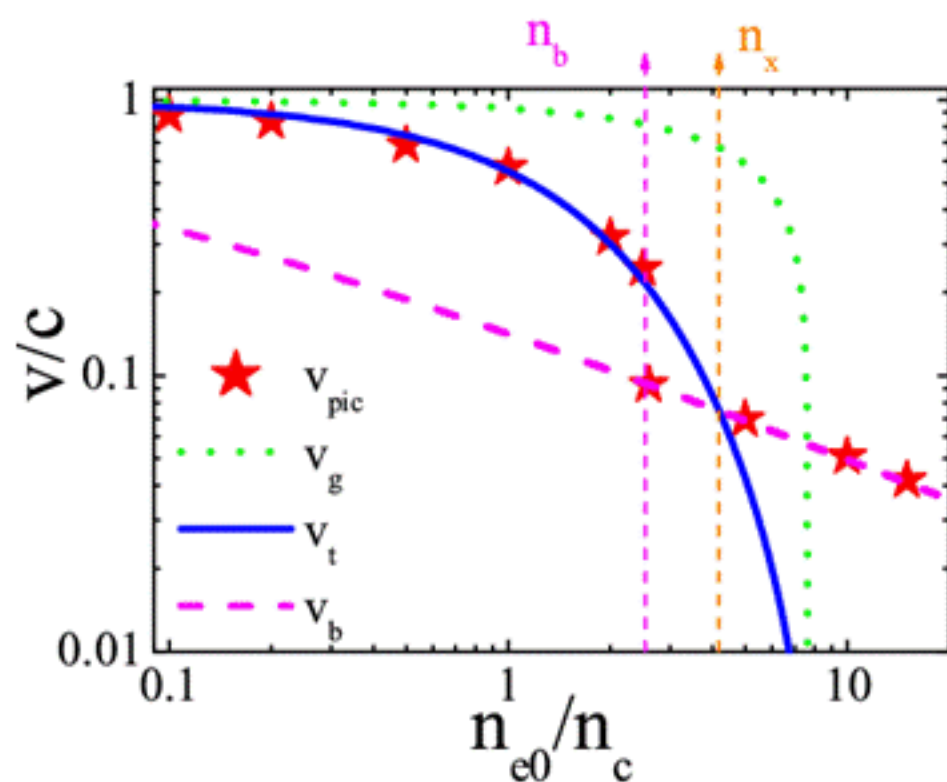


Ultra-intense laser pulse propagation in plasmas: hole-boring or relativistic transparency?

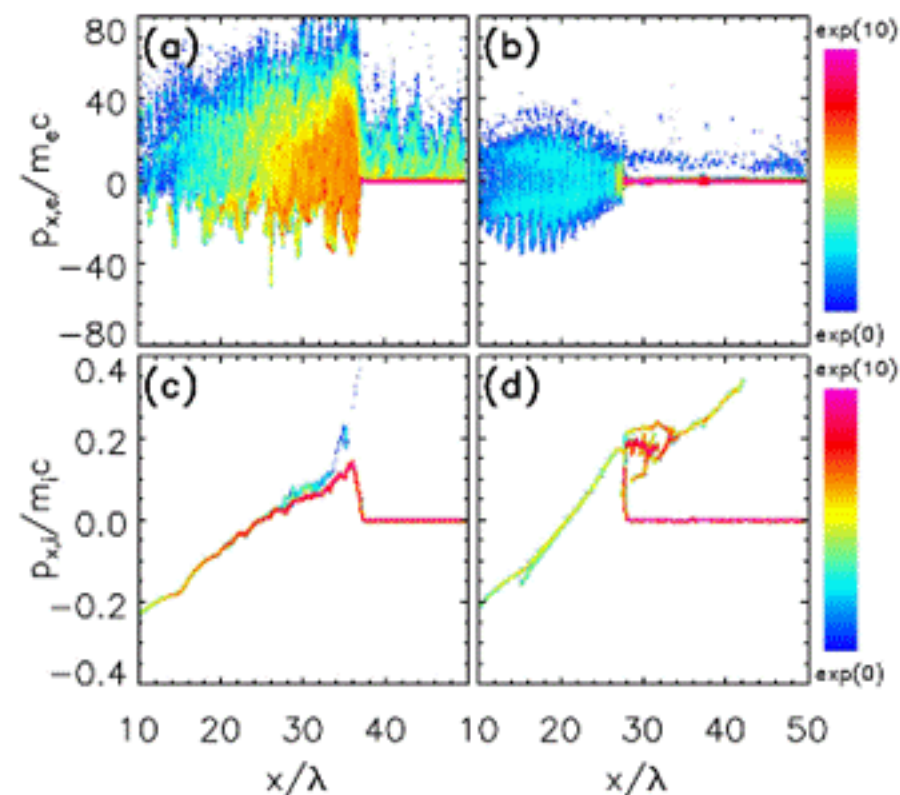


Su-Ming Weng (CSN, ILE)

The propagation features of relativistic laser pulses are studied systematically between the relativistic transparency (RT) regime and the hole-boring (HB) regime by PIC simulations. [Weng *et al.*, *New J. Phys.*, **14**, 063026 (2012)]



Obvious jump in the propagation velocity of a CP pulse with intensity $a=10$ from RT regime to HB regime.



Phase spaces of electrons (a) and (b) and protons (c) and (d). Left pictures are for $n_e = 2.5 n_c$ in RT regime, while right pictures are for $2.6 n_c$ in HB regime.