

Abstract Submitted  
for the DPP09 Meeting of  
The American Physical Society

**Charge dependence of impurity peaking factor** SARA MORADI,  
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ter, Germany, BORIS WEYSSOW, EFDA-CSU Garching, München Germany —  
The experimentally found dependence of impurity transport characteristics, such as  
diffusivity and pinch velocity, on the impurity ion charge  $Z$ , remains unexplained  
both by neoclassical and anomalous theoretical predictions. In this contribution the  
model for the impurity anomalous transport due to the ITG/TE unstable modes has  
been developed further by taking into account the effects of impurity ion collisions  
with the main plasma components becoming more and more important with increas-  
ing impurity charge. In linearized transport equations these effects are included as  
friction and thermal forces and collision energy exchange affecting perturbations of  
impurity ion parallel velocity and temperature, correspondingly. For the plasma  
conditions examined here, where the magnetic shear is low, the collisional effects  
are dominant in the pinch velocity and result in a very strong  $Z$  dependence of the  
impurity peaking factor. The sign and magnitude of the pinch-velocity and  $p$  de-  
pends essentially on the instability mechanism, i.e., ITG or TE drive. The results  
of calculations are compared with the experimental observations.

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Date submitted: 10 Sep 2009

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