



Contribution ID: 17

Type: **not specified**

Energy Deposition and Wakefield Excitation of Ion Beam Passing through a Plasma Target

Friday, 23 June 2017 10:50 (20 minutes)

Here we will report the recent progress on ion beam plasma interaction.

The measured energy loss of 400keV helium ion was much lower than the theoretical predictions. It was also found that, there were quite a few fraction of He¹⁺ after the He²⁺ ion beam passing through the plasma, so that the effective charge state should be lower than the nuclear charge taken for theoretical calculation.

We also found that, the proton beam were strongly focused after passing through the plasma target, and the energy of the focused proton beam were quite uniform, as means that the proton beam can passing through the plasma target without strong Coulomb collisions. Simulation shows that the wake-field could strongly influence the distribution and revolution of the free electrons and form a self-modulated, periodic, focusing, and collision-less tunnel in plasma.

Primary author: Prof. ZHAO, Yongtao (XJTU & IMP)

Presenter: Prof. ZHAO, Yongtao (XJTU & IMP)

Session Classification: Nanosecond plasma