

Students' Annual Seminar

Spectral Imaging with laser driven ions

S V Rahul

Intense, ultrashort laser pulses have long been used to generate hot plasmas which have been used as sources of ultrashort bursts of accelerated ions. Owing to their short duration and large bandwidth, these beams have been used as probes for temporally resolved imaging of various processes, by detecting protons in an energy resolved manner. Such experiments, however, have been possible using high energy ions (energies $>$ few MeVs) using petawatt class lasers.

In this talk I will outline the developments in using CR-39 Nuclear Track detectors for single-shot spectrally resolved proton imaging. Using an automated method of track counting, we show that these detectors can improve the spectral resolution by about an order of magnitude in comparison with methods reported previously. Further, I will outline on using these detectors towards understanding the ion acceleration processes in the interaction of ultrashort pulses with liquid microdroplets.

Friday, Feb 15th 2019

11:00 AM (Tea/Coffee at 10:15 AM)

Seminar Hall, TIFR-H