

Abstract Submitted  
for the SHOCK11 Meeting of  
The American Physical Society

**Linear TOF mass spectrometers as a tool for the investigation of impact ionisation plasma** ANNA MOCKER, Institute for Space Systems (IRS), Universitaet Stuttgart, Germany, THERESA JOHNSON, Stanford University, EBERHARD GRUEN, MPI for Nuclear Physics, Heidelberg, Germany, KLAUS HORNUNG, Universitaet der Bundeswehr, Muenchen, Germany, SIR JONATHAN HILLIER, Open University, UK, SASCHA KEMPF, ZOLTAN STERNOVSKY, LASP, University of Colorado, Boulder, RALF SRAMA, IRS, Universitaet Stuttgart — Impact physics plays an important role in a variety of field such as investigation of matter at extreme conditions, shock waves in solids or even planetary and cosmic dust research. Impact ionisation is a key part of impact physics, playing an increasingly important role at small scales. Linear TOF mass spectrometry provides an opportunity for investigating the thermodynamical properties, e.g. the velocity distribution, of the charged particles within an impact plasma. To relate the dynamical parameters of individual particle impacts with the properties of the resulting plasma, a comprehensive programme of impact experiments under well known experimental conditions for a wide variety of impact parameters is needed. For this suitable solar system analogue dust particles are accelerated to hypervelocity speeds, an activity performed at the MPI for Nuclear Physics in Heidelberg, Germany. Here a 2 MV Van de Graaff accelerator accelerates charged micron and submicron-sized dust particles to speeds in excess of 80 km/s.

Anna Mocker  
Institute for Space Systems (IRS), Universitaet Stuttgart, Germany

Date submitted: 18 Feb 2011

Electronic form version 1.4