

Plenary talks (PV)

Plenary Talk PV IX Thu 9:45 E 415
**Entanglement, Interference and Tunneling - Multiparticle
Coincidence Experiments of Molecular Fragmentation** —
•REINHARD DÖRNER, LOTHAR SCHMIDT, TILL JAHNKE, MARKUS
SCHÖFFLER, and JIAN WU — Goethe Universität, Frankfurt am Main,
Germany
COLTRIMS Reaction Microscopes today allow measuring the correla-
tions between all fragments (electrons and ions) from ionization pro-

cesses of atoms and molecules. We will show synchrotron, laser and
ion beam based experiments, where this technique is used to explore
fundamental quantum phenomena such as entanglement, double slit
interference and tunneling.
One of the examples we will show is the realization of Einsteins
Gedankenexperiment on double slit interference where he proposed
that measuring the momentum transfer to a double slit would unveil
through which of the two slits the quantum particle had passed.