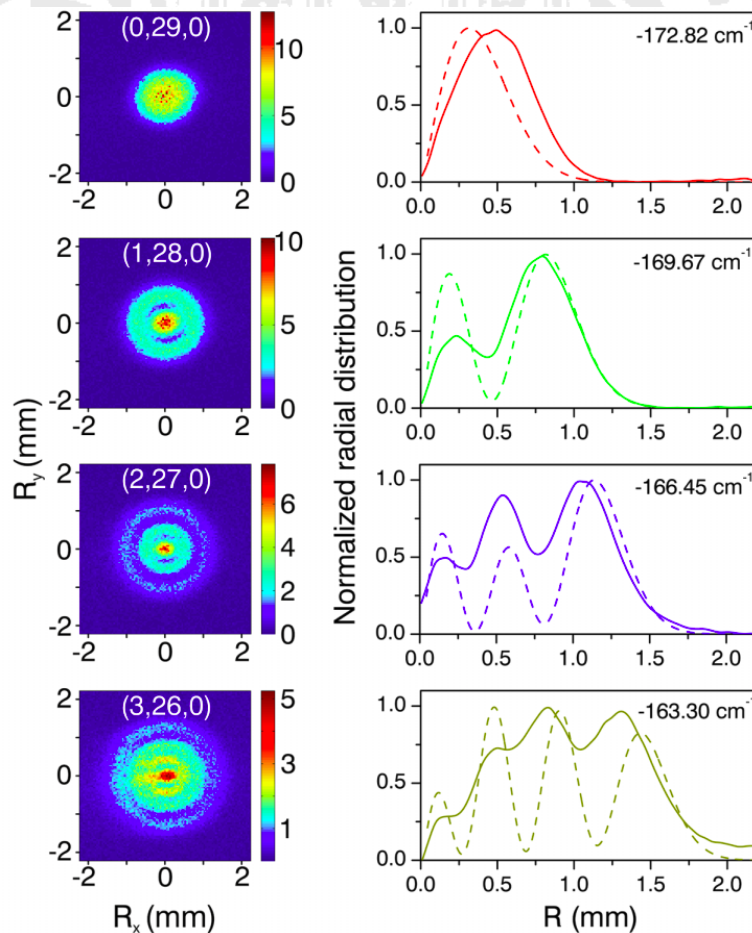


PHYSIKALISCHES KOLLOQUIUM

AM 22. JUNI 2015 UM 17 UHR C.T.

IM GROßEN HÖRSAAL



NODAL STRUCTURE OF 4 HYDROGEN STARK STATES, RECORDED BY PERFORMING A PHOTOELECTRON VELOCITY MAP IMAGING EXPERIMENT

(A. STODOLNA ET AL., PHYSICAL REVIEW LETTERS 2013. 110(21): P. 213001.)

STRONG FIELD PHOTOELECTRON HOLOGRAPHY

PROF. DR. MARC VRAKING

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The application of velocity map imaging for the detection of photoelectrons resulting from atomic and molecular ionization allows the observation of interferometric, and in some cases holographic structures that contain detailed information on the atomic and molecular targets from which the photoelectrons are extracted. In my colloquium I will present several recent examples of the use of photoelectron velocity map imaging in experiments where atoms and molecules are exposed to strong optical and dc electric fields. I will discuss (i) observations of the nodal structure of Stark states of hydrogen and helium measured in a dc electric field, (ii) the appearance of holographic structures in mid-infrared strong-field ionization of metastable Xe atoms and (iii) the determination of interatomic distances in molecules by means of laser-induced electron diffraction (LIED).