Fakultät für Mathematik und Physik
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PHYSIKALISCHES KOLLOQUIUM

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IM GROßEN HÖRSAAL

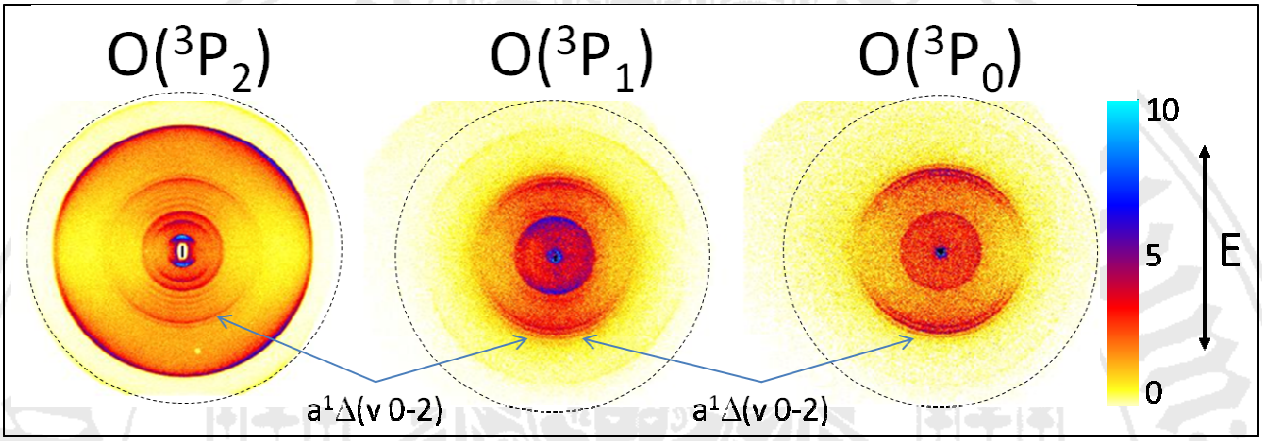

Figure caption: Velocity map images of $O(^3P_j$ j= 2,10) atoms from the photodissociation of O_2 prepared in a pulsed discharge

OXYGEN AND IMAGING, A PERFECT MATCH

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Molecular oxygen, O_2, is fascinating molecule[1]. Despite this, a full understanding of the photodynamics of molecular oxygen is lacking due to the complex electronic structure and the forbidden nature of almost all optical transitions of O_2. Over the past decade our group has been able to reveal many new aspects of O_2 photodynamics[2,3], due in part to the development and application of the velocity map imaging technique[4]. In this talk I will highlight our past work on the photodissociation of: O_2* super-excited states[5], the Herzberg continuum[6] of O_2, singlet oxygen b-state[7], the Schumann-Runge continuum[3,8-10], and O_2-isoprene clusters[11,12]. I will mainly describe new work on the photodissociation of the singlet oxygen a-state (Figure). Velocity map imaging will be shown to be particularly well-matched to the study of O_2 photodynamics.

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