

Abstract Submitted  
for the GEC05 Meeting of  
The American Physical Society

**Rydberg-Like Feshbach Resonances in Dissociative Electron Attachment to Amines and Alcohols** MICHAEL ALLAN, BOGDAN IBANESCU, SVETLANA ZIVANOV, OLIVIER MAY, PATRIC OULEVEY, University of Fribourg — The dissociative electron attachment (DEA) spectra of saturated compounds (*i.e.*, without double and triple bonds) containing the O and N atoms have recently been shown to be generally dominated by Feshbach resonances with double occupation of Rydberg-like orbitals around a cationic core {T. Skalický and M. Allan, *J. Phys. B* **37**, 4849 (2004)}. The Feshbach resonance serves as a doorway state and is predissociated by a repulsive valence state of the anion. These resonances shift to lower energies with alkyl substitution, in contrast to the shape resonances, and are found at surprisingly low energies in amines because of their low ionization energies. Feshbach resonances have been identified already earlier as being responsible for DEA in water, ammonia, and other molecules. We continue this work with the aim of gaining fundamental insight into the dynamics of dissociation of saturated organic compounds by electron impact. We study the dependence of the dissociation patterns on the energy of the resonance and the type of alkyl substitution of the amines.

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Date submitted: 09 Jun 2005

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