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Dynamics of resonant excitation and attachment processes in electron-molecule collisions[1]

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Vibrational excitation and dissociation of small molecules by low-energy electron imapct are dominated by resonant processes. In the collision of electrons with molecules and molecular ions, are dominated by resonant processes, Our theoretical understanding of these basic processes comes principally from resonance scattering theory and simple one-dimensional models of the reaction dynamics. This talk will focus on dramatic effects in low-energy dissociative electron attachment (DEA) that are purely polyatomic in origin and that can only be studied with a multi-dimensional treatment of the dissociation dynamics. These effects will be illustrated by our studies of DEA in water, hydrogen disulfide and formic acid.

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