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Momentum Imaging of the Dynamics of Dissociative Electron Attachment to Molecules of Biological Significance[1] DANIEL SLAUGHTER, Lawrence Berkeley National Lab, Berkeley, USA, YOSUKE KURIYAMA, YU KAWARAI, YOSHIRO AZUMA, Sophia University, Tokyo, Japan, ALI BELKACEM, Lawrence Berkeley National Lab, Berkeley, USA — Direct observations of dynamics following dissociative electron attachment (DEA) in biologically-relevant molecules are presented. These experiments employ a 3D momentum-imaging spectrometer (the DEA reaction microscope), a pulsed low-energy electron gun and an effusive gas target. This approach allows the measurement of kinetic energy and angular distributions of ionic fragments produced by DEA, in some cases elucidating the total kinetic energy release following two-body breakup. Significant progress has been made in describing the dynamics of the dissociating transient anion formed by electron attachment to relatively simple molecules [1-4]. Building upon that prior work, we present several aspects of the rich dynamics of DEA to nucleobases and related compounds.

[1] Slaughter et al. Physical Review A 87 052711 (2013)
[2] Moradmand et al. Physical Review A 88 032703 (2013)
[3] Haxton et al. Physical Review A 84 030701 (2011)
[4] Adaniya et al. Physical Review Letters 103 233201 (2009)

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