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Isomerization of Ethanol Induced by Synchrotron Radiation[1]
NORA G. KLING, RAZIB OBAID, Univ of Connecticut - Storrs, UTUQ ABLIKIM, SVEN AUGUSTIN, BALRAM KADERIYA, STEFAN ZIGO, Kansas State University, ILEANA DUMITRIU, Hobart and William Smith Colleges, KIRSTEN SCHNORR, Max-Planck-Institut fuer Kernphysik, TIMUR OSIPOV, SLAC National Accelerator Laboratory, RENE BILODEAU, Univ of Connecticut - Storrs, DANIEL ROLLES, Kansas State University, NORA BERRAH, Univ of Connecticut - Storrs — We have carried out a synchrotron-based X-ray-induced hydrogen-migration experiment in ethanol (CH_3CH_2OH) using the photoion-photoion coincidence (PIPICO) technique at the Advanced Light Source. A photon energy of 312 eV, situated above the carbon K-edge, ensures that predominantly C(1s) electrons are ionized. This inner-shell ionization induces both single and double hydrogen migration from the carbon sites to the oxygen site, evidenced in our coincidence maps that display the observed channels, including $H_2O^+ + C_2H_3^+ + H^{+/0}$ and $H_2O^+ + C_2H_2^+ + 2H^{+/0}/\,H_2^{+/0}$. The presence of the water ion indicates that at least one hydrogen atom has migrated. We will present the 3D momenta of these and other relevant channels.

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