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Radiative Electron Capture to Continuum in 90 AMeV U88+ + N2: the Short Wavelength Limit of Electron Nucleus Bremsstrahlung SIEGBERT HAGMANN, IKF Univ. Frankfurt, MUAFFAQ NOFAL, MPI-K Heidelberg, THOMAS STOEHLKER, CHRISTOPHOR KOZHUHAROV, GSI-Darmstadt, XINCHENG WANG, Fudan Univ. Shanghai, ALEXANDER GUM-BERIDZE, UWE SPILLMANN, REGINA REUSCHL, SEBASTIAN HESS, FRITZ BOSCH, DIETER LIESEN, GSI-Darmstadt, DORIS JAKUBASSA, RZ-LMU Muenchen, JOACHIM ULLRICH, ROBERT MOSHAMMER, MPI-K Heidelberg, REINHARD DOERNER, IKF Univ. Frankfurt — At relativistic velocities, the radiative electron capture to the continuum (RECC) increasingly competes with the non-radiative capture to continuum ECC. This allows investigating the role of the additional radiative degree of freedom in relativistic collisions dynamics. Using the imaging forward electron spectrometer in the ESR storage ring at GSI we have measured coincidences between x rays and cusp electrons and identified the coincident photons as coming from the short wavelength limit of electron nucleus bremsstrahlung. We show that this technique using inverse kinematics is the only one to allow measuring kinematically complete differential cross sections for electron nucleus bremsstrahlung at the theoretically important short wavelength limit.

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