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Search for multiple-electron emission in Auger transition processes in solids[1] S. KALASKAR, Department of Physics, UTA, TX, S.L. HULBERT, Q. DONG, Brookhaven National Lab, Upton, NY, B.A. BARTYNSKI, Rutgers University, A.H. WEISS, Department of Physics, UTA, TX — We present electron-electron coincidence measurements from Ag(100) taken using a synchrotron radiation photon beam of 465eV energy (which is just above the Ag 3d threshold), with one electron energy analyzer fixed at 175 eV kinetic energy and the other scanned from 150 to 200 eV. The data show a pronounced step at 175 eV consistent with processes in which the energy associated with the filling of the M core hole is shared with two or more correlated electrons that are emitted in an Auger transition accompanied by multiple-electron emission. These results provide direct evidence for the existence of these multiple-electron Auger processes, first posited to explain the origin of the large low energy tail characteristic of Auger spectra from solids.[2]

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[2]E. Jensen, R. A. Bartynski, R. F. Garrett, S. L. Hulbert, E. D. Johnson, and C.-C., Phys. Rev. B 45, 13636 (1992)

S. Kalaskar
Department of Physics, UTA, TX

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