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**Determination of an $(e, 2e)$ apparatus instrument function using a SIMION simulation**[1] B.A. DEHARAK, N.L.S. MARTIN, U. Kentucky — The motivation for this work were recent $(e, 2e)$ experiments on the angular distribution of electrons, *scattered* through a range of angles, in coincidence with electrons *ejected* at $\pm 90^\circ$ with respect to a 488eV incident electron beam. In general there was excellent agreement between the experimental data and distorted wave Born approximation calculations (see poster by deHarak *et al.*, this conference). However there were apparent discrepancies at small scattering angles and it was unclear whether this was a real effect or was due to the finite (unknown) angular acceptance of our electron spectrometer. We have therefore begun an extensive effort to model the apparatus using SIMION 3D 7.0 Ion and Electron Optics Software. The results presented will include the effect due to the finite volume of the interaction region, as well as the electron lens plus hemispherical analyzer system.

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Bruno deHarak
University of Kentucky

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