
XUEGUANG REN, THOMAS PFLUEGER, ARNE SENFTLEBEN, ALEXANDER DORN, JOACHIM ULLRICH, Max-Planck-Institute for Nuclear Physics, Heidelberg, Germany — While electron impact ionization for the simplest atomic species hydrogen and helium can be handled well by theory, more heavy atoms and molecules pose severe challenges. Presently we are performing systematic (e,2e) experiments in the impact energy range below 200 eV for various atomic targets as Ne and Ar, and for molecular species as H$_2$, Ar$_2$, N$_2$, O$_2$ and CO$_2$. The goal is to provide benchmark cross sections covering the full solid angle and a large range of ejected electron energies and momentum transfers by applying an experimental multi-particle imaging technique (Reaction Microscope).

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