3d photoionization of ions from the xenon isonuclear sequence
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The photon-ion merged-beams technique has been employed at the new Photon-Ion spectrometer at PETRA III (PIPE) for measuring
multiple photoionization of Xe^{q+} (q=1–5) ions. Total ionization cross sections have been obtained on an absolute scale for the dominant ionization reactions of the type
h\nu + Xe^{q+} \rightarrow Xe^{r+} + (q-r)e^- with product charge states q+2 \leq r \leq q+5. Prominent ionization features have been observed in the photon-energy range 650–800 eV,
which are associated with excitation or ionization of an inner-shell 3d electron. The well-known collapse of the 4f wave function causes dramatic changes in the spectra
when going from low to high q.

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