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**Rescattering in extended atomic systems** JAN M. ROST, ULF SAALMANN, Max Planck Institute for the Physics of Complex Systems — Laser-driven rescattering of electrons is the basis of many strong-field phenomena in atoms and molecules. Here, we will show how this mechanism operates in extended atomic systems, giving rise to optimal energy absorption. Rescattering from extended systems can also lead to energy loss, which in its extreme form results in non-linear photo-association. Intense-laser interaction with clusters is discussed as an example. We explain fast electronic emission by rescattering of electrons at the highly charged cluster, using experimental and numerically obtained electron spectra.

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