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Strong Perturbation and Multiple Electron Emission in Highly Charged Ion Atom Collisions SIEGBERT HAGMANN, GSI-Darmstadt, LIAO CHUN-LEI, Cal.Inst. Technology — Since Saris pioneering discovery of radiation from the quasi-molecule transiently formed during adiabatic collisions of heavy highly-charged (HCI) ions with atoms the dynamics of electrons during the collisions has intrigued experimentalists and theorists. We show that for strongly perturbing collisions of HCI with atoms topologically highly confined electron emission takes place out of the compound. While the independent electron approximation does account well for simultaneously measured swift collisions the experiments are at variance with theoretical predictions.

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