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How the geometry of phase space influences chaotic ionization KORANA BURKE, University of California Merced, KEVIN MITCHELL, University of Califronia Merced, BARRY DUNNING'S GROUP AT RICE UNIVERSITY COLLABORATION — A Rydberg electron exposed to periodic alternating electric field pulses exhibits chaotic behavior. The ionization fraction drastically changes depending on the size and separation of positive and negative pulses. The ionization fraction as a function of the pulse strength shows a step-function-like behavior which disappears at longer kicking periods. Using the geometric tools from nonlinear dynamics we explain this and the rest of the features of the dependence of the ionization fraction on kicking parameters.

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