

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

**Chaotic Phase Space of a Hydrogen Atom in Crossed Electric
and Magnetic Fields** KORANA BURKE, KEVIN MITCHELL, U. C. Merced —

The motion of the electron of a hydrogen atom placed in crossed external electric and magnetic fields exhibits chaotic behavior. By an appropriate choice of surface of section, we show that the ionization process is governed by the geometry of a homoclinic tangle, and its associated phase space turnstile. This geometry can be used to make predictions about the ionization rate of this system.

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Date submitted: 20 Nov 2009

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