

Abstract Submitted
for the DAMOP12 Meeting of
The American Physical Society

Characterization of an imaging system for cold Rydberg atoms¹

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University of São Paulo — In this work, we have built an imaging system for cold Rydberg atoms. The system consists of three grids, a tube of flight and a MCP (micro channel plates) detector with a phosphor screen. In one of the grid, we can apply a HV pulse to ionize the Rydberg atoms. DC voltages are applied on the other grids, which work as electrostatic lenses. By varying such voltages, we are able to get a better resolution in our MCP detector. The ions are detected by the MCP, with image them on the phosphor screen. We have obtained ion images of cold Rydberg atoms from a magneto optical trap as well as CO₂ dipole trap. The experimental images were compared with theoretical images obtained from a simulation, and a good agreement was observed.

¹We acknowledge financial support from FAPESP, CNPq, INCT-IQ, AFOSR (FA9550-09-1-0503).

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Date submitted: 27 Jan 2012

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