

Abstract Submitted
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Atom-chip **trap**
for Rydberg atom experiments¹ ARNE SCHWETTMANN, JONATHON SED-
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We report on an atom-chip trap experiment designed to investigate the interactions
between high-lying Rb Rydberg atoms ($n > 30$) and the role of Rydberg atom impu-
rities. A magnetic microtrap that can be transformed into a double-well potential is
created by dc and rf currents running through microscopic wires on an atom chip.
The two wells can be separated by several micrometers. The microtrap is loaded
with ultracold Rb atoms from a mirror magneto-optical trap via an intermediate
millimeter-size magnetic wire-trap. A home-built Rydberg excitation laser at ~ 480
nm is used to excite Rydberg atoms in the magnetic trap.

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