

Abstract Submitted
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Experiments in Planar Multipole Ion Traps¹ ROB CLARK, TIMOTHY BURKE, DYLAN GREEN, The Citadel — We present the design and demonstration of multipole ion traps based on concentric rings. We have developed both surface-electrode and layered planar trap designs which enable one to null the quadratic term in the electric potential to a high degree. Experiments demonstrating frequency upconversion of an applied signal demonstrate the nonlinear dynamics present in the trap. Applications include quantum chaos, ultracold chemistry, and, potentially, mass spectrometry.

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