Abstract Submitted
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Trapping ions in a segmented ring trap B.P. TABAKOV, J.D. STERK, F. BENITO, R. HALTLI, C.P. TIGGES, D. STICK, M.G. BLAIN, D.L. MOEHRING, Sandia National Laboratories, Albuquerque NM 87123 — We demonstrate robust trapping in an ion trap which has a ring shaped RF node. Ions are back-side loaded through a small 10 μm diameter loading hole and we have demonstrated thousands of complete circuits around the trap. Each circuit passes through 44 trapping zones; the trap has 89 independent DC control electrodes. Measurements of the tangential secular frequency indicate a weak dependence on the RF and the loading hole. The ion trap is fabricated using four metal layers, allowing for the inner islanded electrodes to be electrically routed underneath the trap with negligible effects on the trapped ions.

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