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Dynamics and cooling behavior of charged particles in a linear hybrid rf/dc trap. A. P. Williams and I,. Maleki, Jet Propulsion Laboratory, California Institute of Technology.--- We report the results of simulations of many ions confined in a linear hybrid rf/dc trap. This simulation includes the rf-driven micromotion, as well as the forces due to cylindrical endpins held at a dc voltage. The spatial and temporal behavior of the ion cooling process is studied by monitoring the ions' secular temperature; we find that in some regimes of t-rapping parameters, the ions cannot. be cooled to arbitrarily low secular temperatures despite the application of a uniform viscous damping force. In cooled clouds, we observe helical and cylindrical shell structures. These results are compared with those in the hyperbolic Paul trap and the ring (racetrack) quadruple trap geometries.

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Angelyn P. Williams
Jet Propulsion Lab MS 298-100
4800 Oak Grove Dr
Pasadena, CA 91109
angelyn@airship.jpl.nasa.gov