Wave electrophoretic trapping and chaos\textsuperscript{1} BOYD EDWARDS, LLOYD CARROLL, AARON TIMPERMAN, JARROD SCHIFFBAUER, JON MEASE, West Virginia University — Synchronized oscillating electric potentials are applied to a periodic array of stationary cylindrical electrodes in a stationary conducting viscous fluid. These potentials produce a longitudinal traveling wave that traps high-mobility ions and partially traps intermediate-mobility ions in periodic and narrowband chaotic attractors with average velocities that are commensurate with the wave speed. Incommensurate broadband chaotic attractors feature ascending and descending geometric series of orbit transitions that converge at the same unstable trapped orbit.

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Boyd Edwards
West Virginia University

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