

Abstract Submitted
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Liquid metal flow in a spherical shell: recent results. SANTIAGO ANDRES TRIANA, DOUGLAS H. KELLY, DANIEL S. ZIMMERMAN, IREAP and Department of Physics, University of Maryland, DANIEL P. LATHROP, IREAP, IPST and Department of Physics, University of Maryland — Motivated originally to study dynamo action in an Earth-like geometry, our group has performed a series of experiments using liquid sodium. An externally applied magnetic field probes the underlying flow field in a spherical Couette configuration revealing a series of inertial wave modes. The frequencies and wave numbers of these modes closely match those predicted for a full rotating sphere and numerical calculations of the magnetic field based on those modes also agree very well with the observed induced field. The modes seem to be excited by virtue of the over-reflection instability. Implications for the Earth's core are briefly discussed.

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