Abstract Submitted
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Faraday instability on a sphere: Platonic solids and drift LAURETTE TUCKERMAN, ALI-HIGO EBO ADOU, PMMH-CNRS-ESPCI, DAMIR JURIC, JALEL CHERGUI, LIMSI-CNRS, SEUNGWON SHIN, Hongik University — A liquid drop subjected to an oscillatory radial force comprises a spherical version of the Faraday instability. A linear stability analysis of this problem is carried out by applying the Kumar and Tuckerman Floquet method for a spherical geometry. The time-dependent shape of the drop and the velocity field in and around it are calculated using BLUE, a code based on a hybrid Front-Tracking/Level-set algorithm for Lagrangian tracking of arbitrarily deformable phase interfaces. For frequencies corresponding to spherical harmonics of low degree, simulations show Platonic solids which alternate with their duals on a short time scale while drifting on a long time scale.

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