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Low-G inertial-capillary meniscus motions in a channel[1] JOSH MCCRANEY, PAUL STEEN, Cornell University, JOSHUA BOSTWICK, Clemson University — In low-g environments, residual accelerations can induce fluid reservoir reconfiguration, resulting in dynamic instabilities. Since channel geometries are prevalent aboard critical spacecraft fluid systems, such as propellents, cryogens, and wastes, understanding flow stability is crucial to ensure fluid is positioned and available when needed. In this work we analyze the normal oscillations of a low-g fluid in a rectangular channel, reporting fundamental frequencies for pinned, natural, and mobile contact line conditions.

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