

On the More Complex Wavelength Dependency of Airy Isostasy in Icy Shells of Ocean Worlds

Wesley S. Tucker¹ and Andrew J. Dombard¹

¹Department of Earth and Environmental Sciences, University of Illinois Chicago, Chicago, IL

Corresponding author: Wesley Tucker (wtucke5@uic.edu)

Contents of this file

Table S1

Additional Supporting Information (Files uploaded separately)

Caption for Table S2

Introduction

Supporting information includes a table model variations (Table S1) and a table (uploaded separately) of elevations for the surface and root topographies of each simulation type (see Table S1) and wavelength. A csv file of Table S2 is available at <https://doi.org/10.5281/zenodo.8277281> (Tucker & Dombard, 2023).

Table S1. Variations in Model Parameters

Simulation	Surface temperature (K)	Ocean temperature (K)	Ice density (kg/m ³)	Ocean density (kg/m ³)	Surface amplitude (m)	Base amplitude (m)
Buoyancy	100	273	920	1000	100	1150
No buoyancy	100	273	920	920	100	1150
Flat root	100	273	920	1000	100	0
Cold surface	70	273	920	1000	100	1150
Ammonia ocean	100	176	920	1000	100	1150

Note. Other parameters that are constant across all simulations include gravity (1.315 m/s²), reference thickness of the ice shell (20 km), and creep parameters (Durham et al., 2010) (see section 2.3).

Table S2. Elevation Measurements for Surface and Root Topographies