



A regional analysis of the relative importance of elasticity and isostatic compensation mechanisms for Venus

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Until data such as seismological observations become available, the only means of improving our knowledge of the lithosphere and mantle structure of Venus is by the analysis of its gravity field and topography. In this study, we use the latest spherical-harmonic models of these fields to examine the relative importance of elastic and isostatic compensation mechanisms. We focus on two different regional-scale (1000's km) geological features: terrae, which some authors consider to be analogous to continents on the Earth (e.g. Ishtar Terra), and the highland regions that have been proposed to overlie active hotspots (e.g. Alta and Beta Regio). We examine the admittance, inferred elastic-lithosphere thickness and apparent compensation depth values inferred from the compensation mechanism analysis in order to compare and contrast the lithosphere and mantle structures of these regional features.