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**North-south components of slope in the global topography of Mars: Evidence for an ice-rich shallow crust?**

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Based on an analysis of north-south components of slope angle in the global topography of Mars, this study evaluates the question of whether equatorward facing slopes in the mid to high latitudes are steeper than poleward facing slopes, based in the hypothesis of sublimation exhumation of very ice-rich materials. Past studies have shown that it is the case that the equatorward (warmer) slopes are steeper than the poleward slopes as measured in individual troughs in the polar layered deposits. Empirical results from this study show that equatorward facing slopes range from 0.1§ to 0.3§ steeper than poleward facing slopes, thus lending topographical evidence for an ice-rich shallow crust on Mars in the mid to high latitudes. This study is based on MOLA 1/64§ gridded elevation data, from which slope angles, slope aspects, north-south components of slope angles, and other derivative data are calculated. It is additionally concluded that a future study based on radii data rather than elevation data would likely produce more reliable slope angle and slope aspect calculations, further refining this argument.

<http://water-on-Mars.info/>

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