



Surveying ice-rich environments and deposits on Mars

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We report on our currently ongoing systematic survey of potentially ice-rich deposits on Mars. The analysis builds on our recent studies dedicated to selected sites on Mars. We are now focusing more on a general understanding of the link between morphological and physical properties to interpret ice-related landforms on Mars. Therefore, the survey covers typical examples of different landforms associated with ice-rich environments and deposits on Mars. For each of these we are performing parameter studies using the Berlin Mars near Surface Thermal model (BMST). This modeling yields estimates on the potential for the stability of a persistent ground-ice deposit, including associated timescales. Furthermore, the modeling allows one to derive minimum thicknesses for a potential sublimation till. Apart from advancing our understanding of the ice and water inventory of Mars and its evolution over the geological history of Mars, this work is aimed at supporting upcoming and proposed missions to Mars, for example ExoMars, MSL or ARES.