



A peculiar spectral unit in the Southern Amazonian polar layered deposits

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Abstract.

South Polar regions were previously mapped by Tanaka and Scott (1987), revealing different geological units ranging from Noachian crater terrains to Amazonian polar layered and polar ice deposits (Apl and Api, respectively). In particular the Apl deposits are characterized by alternating dark and light lithologies in a smooth, medium albedo material with sparse craters (Milkovich et al., 2002). Recently, a spectral parameters analysis, around $1\ \mu\text{m}$ (see Carrozzo et al., 2012), highlighted how a portion of the Apl can be differentiated from a spectroscopical point of view respect to the rest. In particular this peculiar area seems different in composition from the surrounding Apl terrains, but spectrally similar to some craters dominated by dark dunes. This region was considered as a new spectral unit enriched in pyroxene content (Carrozzo et al., 2013). Here we have considered the spectral features from this region of interest and we have preliminary mapped it using the Spectral Angle Mapper (Kruse et al., 1993) supervised classifier to OMEGA mosaic of successive Solar longitude (Ls). The results evidence that this portion of the Apl area is the only region spectrally mapped, confirming that it is peculiar from a spectroscopical point of view compared to the rest of the South Polar regions. Here we will show morphological and spectroscopical characteristics of this region to better address the characteristic of this smooth region and understand its possible formation and evolution.

References

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