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Evidence of recent flow activity in Acidalia Planitia, Mars.

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Acidalia Planitia (centered at 45°N and 10°E) show numerous examples of thumbprint terrains. These landforms include curvilinear rides with pits, hills with concentric lobes and individual mounds with pits. We did a GIS mapping using HIRISE images and topographic profiles from MOLA data in order to better constrain the origin of these landforms. The limit of the thumbprint terrains exhibits peripheral ridges with some pressure ridges in contact with topographic obstacles (mesas ...) which are diagnostic of viscous flows from north to the south. We also report individual hills with concentric lobes outside the limit of the thumbprint terrains. Different terrestrial analogues and sequence of events explaining these events and landforms will be discussed. Preliminary results suggest that these thumbprint terrains may be analogous to mudflow or viscous flow features in association with a glacial or periglacial environment. But, the exact origin of these different episodes remains unknown. Further analysis will include a more detail mapping of the source of the flows that produced these thumbprint terrains. Other relevant questions that remain open include the paleoclimatic environment involve for such a process and the possible influence of volcanism in that area.