



## **Development of labyrinths on Titan: A numerical model based on surface dissolution**

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Titan is an Earth-like world with active erosion processes based on the interaction of liquid methane with solid organics and ices at the surface, which shapes the landscapes over geological timescales. The Cassini mission allowed to discover the so-called “labyrinthic terrain”, heavily dissected regions on Titan located at high latitudes and resembling terrestrial cockpit or polygonal karst terrain developed by rock dissolution, thanks to repeated Cassini/RADAR observations. In this work, we make use of a 3D Landscape Evolution Model (LEM) that includes karstic dissolution as the major geological process, coupled to a radar backscattering model able to generate te associated SAR images of the numerical landscapes, in order to infer the possible thickness and degree of maturation of the Titan karst.