

Martian gullies: possible formation mechanism by dry granular material.

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1 Some of the geomorphological features in Mars are the gullies. Some theories developed tried explain its origin, either by liquid water, liquid carbon dioxide or flows of dry granular material. We made a comparative analysis of the Martian gullies with the terrestrial ones.

We propose that the mechanism of formation of the gullies is as follows: In winter CO₂ snow mixed with sand falls in the terrain. In spring the CO₂ snow sublimate and gaseous CO₂ make fluid the sand which flows like liquid eroding the terrain and forming the gullies. By experimental work with dry granular material, we simulated the development of the Martian gullies injecting air in the granular material.

- 2 We present the characteristics of some terrestrial gullies forms at cold environment, sited at Nevado de Toluca Volcano near Toluca City, México. We compare them with Martian gullies choose from four different areas, to target goal recognize or to distinguish, (to identify) possible processes evolved in its formation. Also, we measured the lengths of those Martian gullies and the range was from 24 m to 1775 meters. Finally, we present results of our experimental work at laboratory with dry granular material.**