

# ***Interactive comment on “Exploring Geomorphic Processes and Martian Gale Crater Topography on Mars using CTX and HiRISE Express Image Dataset” by Pavan Kumar et al.***

**Pavan Kumar et al.**

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Dear Sir Thank you for providing constructive comments. I appreciate your effort for improvement of this manuscript.

Response 1. This research article presents a geomorphological analysis of fluvial- and wind-related landforms on Gale crater as well as a planet-scale distribution of the different kind of ejecta deposits associated to impact craters. I have not found a relationship between the geomorphological analysis of the landforms on the Gale crater and the planet-scale distribution of ejecta deposits. I think authors should treat these subjects in different research articles. Authors Response: Planet-scale distribution of

ejecta deposits has been correlated with geomorphological analysis because it is most important part of this research.

2. The most consistent part of the paper is related to the improvement of the images, where authors seem to have expertise. Authors Response: All the images have been re-modified according to standard of ESSD policy.

3. The poorest parts of the work involve the poorly written English, the explanation about the data and methods used, and the geomorphological analysis of the landforms. Authors Response: All literature has been carefully re-written.

4. In addition, authors should include more recent references. Authors Response: Most recent reference has been added in literature part of manuscript.

5. It is not clear the topographic dataset which authors have used in this work (MOLA DEM or CTX-derived DEM?). MOLA DEM presents a very-low pixel size (463 m) for performing a precise topographic analysis of the different landforms. In contrast, HRSC- or CTX-derived DEMs (50-75 and 6 m/pixel, respectively) are better for this purpose. Authors Response: Authors have used CTX-derived DEMs data set.

7. On the other hand, the map does not present a frame, geographic grid nor a scale bar. These are key elements of any geologic or geomorphological map, which represents the final result of a geologic/geomorphologic study. Authors Response: A frame, geographic grid nor a scale bar has been added in main Figure 3 and also added in all produced images.

8. The rest of the figures related to the landforms show a low quality that, in my opinion, do not fit the quality criteria of a SCI publication. Authors Response: All the images have been re-modified at 500 DPI according to standard of ESSD policy.

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Discussion paper

