

## ***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.***

### **Anonymous Referee #5**

Received and published: 21 February 2019

The proposed manuscript intends to investigate geomorphic processes on Gale Crater – Mars using topographic and imagery datasets. I encounter several very important issues: 1) Poor use of the English language; 2) Lack of more recent references; 3) Lack of important references: e.g. Mc Ewen (2007) for HiRISE dataset; Eliason (2009) for radiometric corrections. And many others: MOLA and CTX dataset. 4) The introduction should be divided into: 1) Mars global state of the art view and Gale Crater state of the art. 5) The methodological section is missing some key aspect of the study: how was the image mosaic processed? Which software was used? Standard (ISIS) or developed by the authors? Precision accuracy of processing methodologies? how was Gale crater morphology mapped? 6) How does the presented results differ from the already

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presented results of Anderson and Bell (2010)? The presented geomorphological feature map (Fig. 3 and detailed Fig.4, 5, 6, 7 and 8) lacks in detail when comparing it with the (same) map presented in Anderson and Bell (2010). 7) The manuscript title and objectives state geomorphological study of Gale Crater but results and discussion also try to relate eject layers for the global surface of Mars with the morphology of Gale Crater. The methodology does not describe the dataset or methodological approach used for the latter identification. Also, the discussion between the two subjects needs to be improved in order to be of substance in this particular line of investigation. 8) As a science dataset manuscript, I would expect to have access to the results, but authors do not mention where they can be found. No data is presented besides the one we can already encounter at PDS. From all of the above, it is my belief that this manuscript is not yet at the standard of the Earth System Science Data journal and need a thorough revision. Thus, my recommendation is to reject the paper as is.

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2019-4>, 2019.

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