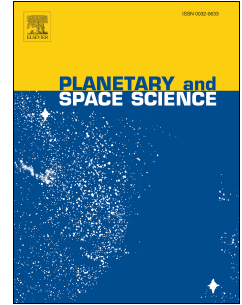


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**NUMERICAL EVALUATION OF SURFACE MODIFICATIONS AT LANDING SITE
DUE TO SPACECRAFT (SOFT) LANDING ON THE MOON**

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Abstract:

Understanding surface modifications at landing site during spacecraft landing on planetary surfaces is important for planetary missions from scientific as well as engineering perspectives. An attempt has been made in this work to numerically investigate the disturbance caused to the lunar surface during soft landing. The variability of eject velocity of dust, eject mass flux rate, ejecta amount etc. has been studied. The effect of lander hovering time and hovering altitude on the extent of disturbance is also evaluated. The study thus carried out will help us in understanding the surface modifications during landing thereby making it easier to plan a descent trajectory that minimizes the extent of disturbance. The information about the extent of damage will also be helpful in interpreting the data obtained from experiments carried on the lunar surface in vicinity of the lander.

Keywords: soil disturbance, surface modification, soft landing; hovering, jet plume, descent trajectory.

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