

The use of swarm robotics enables high-resolution for terrain mapping for improved planetary site selection and surface exploration. This work presents a multi-robot framework that uses LiDAR and voxelized DEM data to identify and rank potential landing zones based on several terrain factors and also overall efficiency. The environment is separated into sectors, assigning one robot per region for efficient exploration. BFS with sensor simulation estimates coverage which was able to achieve ~90% surface coverage with <3% overlap, demonstrating the potential use case of swarm mapping for future exploration and mapping.