

Robotic Precursors to Human Exploration (03)
Poster Session (P)Author: Mr. Subrata Ashe
India, subrata.ashe@gmail.comOPTIMAL PATH CALCULATION ALGORITHM FOR ROVERS IN EXO-PLANETARY
EXPLORATION**Abstract**

Explorations of planets are based on initial data captured by various orbiting imaging satellites/earlier rover missions. These data are sampled and a list of proposed locations is determined which then goes through a series of discussions, resulting with a good landing site for the new rover mission. The probability for obtaining good sample data depends on the path of traversal of the rover in the area of the landing site. To increase this probability an optimal path traversal algorithm is proposed. This method/algorithm is proposed to decide the optimal path before the landing of the rover, based on which the rover will be configured to cover maximum area with limited resources. The input to this proposed algorithm is a group of landing sites' coordinates along with its nearby areas, which will create a coverage matrix and determine the probability of having maximum accurate data for each traversal. The proposed solution will give the path with the maximum probability. More importantly, this solution can be a input parameter in the design of the rover, focusing on the efficient energy utilization.