

SPACE EXPLORATION SYMPOSIUM (A3)  
Mars Exploration – Part 1 (3A)

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SCATTERING OF THE DUST STORM OF MARS AND THE ATTITUDE INVERSION OF MARS  
DETECTOR

**Abstract**

Detection and exploration of planets such as Mars is a way to understand the Universe, and it's basic but important foundation to exploit the outer-space resource and establish experiment base in deep space. The rough surface and the dust storms make a lot of difference to detector when it is landing on Mars. Stochastic particle group were used to simulated the dust storms, and the particle size distribution, the density along with height were taken into account when scattering and transmission characteristic were calculated by VRT (Vector Radiation Transition equation) method. Considering the fluctuation of the Mars surface and the dust storm environment, the electromagnetic echo of Mars surface which was probed by multi-beam detector were simulated. At last, basing on the former parameter we've got, the attitude of the detector were inverted. The results may provide reference for researchers in this area.