Lunar Exploration (3)
Lunar Analysis & Simulation (4)

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RESEARCH ON MOON-EARTH LINK COMMUNICATION ABILITY OF LUNAR DETECTOR

Abstract

Moon-earth communication link budget mainly calculates attenuation of radio waves due to interference and noise.As long distance multi-types interferences and noise of Moon-earth communication link,radio waves endure serious attenuation,so link budget plays an important reference role on communication link design.In order to control transmission of instruction and data reliably and effectively,we have to go deep into research on moon-earth communication link. Firstly,based on the second period of china's lunar exploration project ,according to background of moon-earth link design,the article analyses moon-earth communication of lunar detector and loss influence on the system in communication link,which supplies reliable technical support for future deep-space observing and controlling design.Reference on advice according to deep-space link budget provided by CCSDS and up-down link design parameter-calaculating contetdesign procedure calculating method and etc,this paper adopts uniform format and standard based on designing of spacecraft observing and controlling and mode method of link budget with statistic characters.then we develop the performance including beneficial and harmful tolerance and get the outcome of link budget.This paper develops research on moon-earth communication link budget and simulation method of lunar detector,calculating influence on signal due to all kinds of loss and noise tempature.Parameters of information rate including ground stations error code ratiodeputy carrier modulation index are configured to construct conciseoveralluniversal observing and controlling communication link calculating method,so we can calculate remaining of link performance conveniently fastly and concisely.All the above supports strong reference of future deep-space communication link.