SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Mobile Satellite Communications and Navigation Technology (3)

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DYNAMIC ROUTING ALGORITHM BASED ON PREDICTING MOVEMENT TREND FOR LEO SATELLITE NETWORKS

Abstract

Low Earth Orbit(LEO) satellite system has many advantages in future communication field, such as short end-to-end delay, large capacity, strong anti-destroying ability, etc. This paper proposes a dynamic routing algorithm based on predicting movement trend(MTRA) for LEO satellite system, to solve the problem of the redundancy control packet filed and slow convergence rate in existing space routing algorithms. The routing algorithm formulates dealing ways for detecting link, broadcasting status information and calculating the route, it reduces routing update time and the network load by predicting satellite position and broadcasting orbital parameters,balances service load by broadcasting load state and optimizing the route. Compared with existing algorithm, simulation results show that MTRA reduces packet loss rate and improves network throughput with less routing update time and lower network load.