

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
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RESEARCH ON INTERFERENCE FROM STATIONS PROVIDING FEEDER LINKS OF THE
NON-GEOSTATIONARY MOBILE-SATELLITE SYSTEMS TO STATIONS OF AERONAUTICAL
SERVICE IN THE FREQUENCY BAND 5091-5150 MHZ

Abstract

The lack of frequency resource shows in rapid developing of mobile satellite telecommunication. In 2015 world radiocommunication conference (WRC-15), the new frequency allocation will be reviewed for the use of the band 5091-5150 MHz by the fixed-satellite service which is limited to feeder links of the non-geostationary mobile-satellite systems in the mobile-satellite service (MSS) in earth-to-space direction. In order to insure the safety of civil aeronautics, it is necessary to evaluate the compatibility of the system of new allocated service and the system of aeronautical radionavigation service, which is the original primary service in this band. In the evaluation process, the interference modeling was deducted after the system modeling for both systems. Based on the sharing criteria analysis for aeronautical radionavigation system, the harmful interference from stations providing feeder links of the non-geostationary MSS systems was estimated. The results could be used to adjust the design of non-geostationary MSS systems and setup the related power limit for protection of aeronautical radionavigation systems, and it could also become a technical reference for the new frequency allocation by WRC-15.