

## Research on ARQ Transmission Technique in Mars Detection Telecommunications System

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**Abstract :** This paper studied in the automatic repeat request (ARQ) transmission technique in Mars detection telecommunications system. An ARQ method applied to proximity-1 space link protocol was proposed by this paper. In order to ensure the efficiency of data reliable transmission, this ARQ method combined these different ARQ maneuvers characteristics. Considering the Mars detection communication environments, this paper analyzed the characteristics of the saturation throughput rate, packet dropping probability, average delay and energy efficiency with different ARQ algorithms. Combined thus results with the theories of ARQ transmission technique, an ARQ transmission project in Mars detection telecommunications system was established. The simulation results showed that this algorithm had excellent saturation throughput rate and energy efficiency with low complexity.

**Keywords :** ARQ, mars, CCSDS, proximity-1, deepspace

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