

# 具有光电混合交换能力的星上信令

## 设计与处理方法

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**摘要:** 提出基于光信令和分组资源预留信令消息的一体化信令格式, 简化星地/星星协议流程, 并通过一体化信令的输入和输出端口信息分别建立输入和输出可用路径集, 综合交换网络可用路径资源, 采用负载均衡的方法统一计算可用路径权值, 获得最优光电异构路径, 从而可有效平衡卫星中的光电交换路径负载. 仿真结果表明, 其在平衡光电异构负载和路径一致性方面优于单一信令, 适用于具有光电混合交换能力的卫星中.

**关键词:** 卫星信令; 光电混合交换; 异构路径; 负载均衡

## Design and Processing Method of Satellite Signaling with a Mixed Optical/Electric Switching Capability

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**Abstract:** An integrated signaling scheme based on optical signaling and RSVP signaling is proposed, the satellite-ground/satellite-satellite protocol flow is simplified, and the input and output available path sets are established by the input and output port information of the integrated signaling. Through integrating switching network available path resources, the use of load balancing method to calculate the available path weights, so as to obtain the optimal optical/electric heterogeneous path, which can effectively balance the optical/electric switching path load in the satellite. The simulation results show that the integrated signaling is superior to single signaling in terms of balanced optical/electric heterogeneous load and path consistency, and is suitable for satellites with optical/electric hybrid exchange capacity.

**Key words:** satellite signaling; mixed optical/electric switching; heterogeneous path; load balancing

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