

论文

WDM抗毁网中考虑链路故障相关性的双链路失效保护算法

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摘要

光纤链路由于共享了相同的物理资源, 因此具有一定的故障相关性. 这种故障相关性可以用相关链路失效概率(Correlated Link Failure Probability, CLFP)来表示. 在CLFP基础上, 该文研究了WDM抗毁网中双链路失效问题, 提出了一种新的支持用户区分可靠性(Differentiated Reliability, DiR)的共享通路保护算法: SPPDLF-DiR(Shared-Path Protection for Dual-Link Failures with DiR). 仿真表明, SPPDLF-DiR在满足用户区分可靠性要求的前提下, 能有效地提高资源利用率和降低业务阻塞率.

关键词 [WDM抗毁网](#) [双链路失效](#) [相关链路失效概率](#) [区分可靠性](#)

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A Dual-Link Failure Protection Algorithm with Correlated Link Failure Probability for Survivable WDM Networks

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Abstract

Because the fiber links share the common physical resources, they have the Correlated Link Failure Probability (CLFP). Based on CLFP and Differentiated Reliability (DiR), the dual-link failures problem has been studied, and a novel protection algorithm, which is called Shared-Path Protection for Dual-Link Failures with DiR (SPPDLF-DiR), has been proposed for survivable WDM networks. Under dynamic traffic with different load, the performances of SPPDLF-DiR are simulated. The results show that SPPDLF-DiR not only can satisfy the specific requirements of users but also can effectively improve the resource utilization ratio and reduce the blocking ratio.

Key words [Survivable WDM networks](#) [Dual-link failures](#) [Correlated Link Failure Probability \(CLFP\)](#) [Differentiated Reliability \(DiR\)](#)

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