

带有波长连续性限制的p-cycle算法研究

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摘要 研究了在无任何波长变换器的光网络中传统p-cycle算法保护性能的劣化, 并提出了基于波长互补配置方法以及固定路径最小拥塞业务预路由算法的改进p-cycle算法。通过OPNET仿真平台验证了改进后的p-cycle算法可在略微牺牲动态业务阻塞率的情况下, 很好地满足保护倒换时波长连续性限制, 从而大大改善了p-cycle算法的保护性能, 这对于将p-cycle保护方式应用到现实光网络中具有重要意义。

关键词 [光网络](#) [p-cycle算法](#) [波长连续性](#) [波长互补配置](#) [固定路径最小拥塞算法](#)

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Research on p-cycle algorithms with the wavelength continuity constraint

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Abstract

This paper focuses on the research on conventional p-cycle algorithms' performance degradation while there is not any wavelength converter in optical networks. Further, two improved strategies of p-cycle algorithms, viz. FPLC (Fixed Paths Least Congestion) pre-routing algorithm and wavelength complement configuration method, are proposed. Based on our extensive simulations, it can be concluded that the improved p-cycle algorithms can well satisfy the wavelength continuity requirement when the protection switch is being performed compared with the conventional p-cycle algorithms, in spite of a little higher block probability of dynamic traffic. Thus our work is contributive to applying p-cycle protection to present optical networks.

Key words [optical networks](#) [p-cycle algorithm](#) [wavelength continuity](#) [wavelength complement configuration](#) [FPLC](#)

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