

عنوان مقاله:

A Novel Protection Guaranteed, Quality of Transmission Aware Routing and Wavelength Assignment Algorithm for All-optical Networks

محل انتشار:

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خلاصه مقاله:

Transparent All-Optical Networks carry huge traffic, and any link failure can cause the loss of gigabits of data; hence protection and its guarantee become necessary at the time of failure. Many protection schemes have been presented in the literature, but none speaks about protection guarantee. Also, in alloptical networks, due to absence of regeneration capabilities, the physical layer impairments(PLI) accumulates along the lightpaths (LP) which causes sharp degradation of the Quality of Transmission(QoT), as measured by signal bit error rates (BER). The problem of protection with QoT issues hasbeen rarely studied. In this work, a novel protection backup path ensured, QoT aware Routing and Wavelength Assignment (RWA) algorithm called Virtual Lit –Exhaustive Highest Q factor (V-LitEHQ) is presented which exhibits desirable qualities for reliable network operation. The results of theproposed work are compared with the standard QoT aware versions of the Shortest Path (SP)-First Fit(FF) schemes as well as with literature for both lit and dark protection. The blocking probability (BP) and BER are taken as the performance metric .and the proposed algorithm found to be outperforming as evidenced through simulations

کلمات کلیدی:

Optical Networks , Protection , QoT , Routing and Wavelength Assignment, , Physical Layer Impairments , Shortest Path , Blocking Probability , WDM Networks , Restoration , Bit Error Rate

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