

A Dynamic Physical Impairment-Aware Routing and Wavelength Assignment Scheme for 10/40/100 Gbps Mixed Line Rate Wavelength Switched Optical Networks

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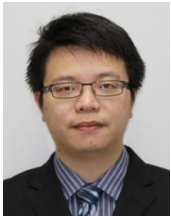
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Abstract— In this paper a novel dynamic RWA algorithm for a optical network with mixed line rates is proposed. Assuming that in the future, 10 Gbps OOK signals will co-propagate with 40 Gbps DQPSK and 100 Gbps DP-QPSK signals, this RWA method treats each connection according to its requested data rate. To evaluate our proposed method, simulations are conducted to compare it with the shortest-distance routing scheme and the minimum-hop routing scheme. Moreover, three different scenarios are investigated for the comparison: one for a 10, 40 and 100Gbps network, one for 10 and 40 Gbps network and one for 10 and 100 Gbps MLR optical network.

Keywords—Mixed Line Rate, Physical Impairment, RWA, XPM



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