

# Survivable mapping of logical topologies in WDM networks

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## ABSTRACT

In WDM networks, there are two different layers in network topology: the logical topology and the physical topology. Each edge of the logical topology maps a lightpath in the physical topology. Since the broken of a physical link may disconnect the logical topology and degrade the network performance. The survivable logical topology design problem becomes a very important issue. All previous studies assume that the logical topology is an undirected graph, which does not meet the demand of networks. Therefore, in this thesis, we focused on the design of survivable mappings for directed logical topologies. Simulation results show that our proposed algorithm MML can effectively reduce the number of additional protection lightpaths, the wavelength number, and the sum of wavelength channels.

Keywords : WDM networks、 logical topology、 survivable mapping

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