

Integrating RLP and Fast Zero algorithm to improve routing performance in optical multistage interconnection networks

ABSTRACT

In this paper, we explore the idea of integrating the Remove Last Pass (RLP) algorithm to the Fast Zero (FastZ) algorithm as the prior initial solution to improve routing performance in optical multistage interconnection networks (OMINs). OMINs are popular for its cost-effectiveness and self-routable characteristics to meet the demand for high speed switching capability. A great challenge in dealing with OMINs is the optical crosstalk caused by optical signal coupling when propagating through the switching elements comprising the architecture. Many algorithms have been developed to solve optical crosstalk using different approaches. The new Fast Zero with RLP (FastRLP) algorithm is developed based on the time domain approach for solving optical crosstalk in the optical Omega network. Simulation results have shown that integrating RLP to FastZ algorithm successfully improved routing performance.

Keyword: Remove Last Pass (RLP) algorithm; Fast Zero (FastZ) algorithm; Optical multistage interconnection networks (OMINs)