

ABSTRACT

Particle Swarm Optimization (PSO) is one of the bio-inspired algorithms and it is introduced to obtain the optimal solution in a high dimensional space. The PSO algorithm solves the routing and wavelength assignment (RWA) problems to carry the given traffic demands so that the network wavelength requirement as well as the average path length for the traffic is minimized. We compare the results with well-known theoretical results for the lower bound on the number of required wavelengths and average path length and to show that can achieve optimal results i.e., throughput, success rate , blocking probability , delay and thus demonstrating the usefulness of PSO technique. Graph theory is used here to form clusters. This project provides a description of logical analysis of the PSO algorithm for best performance condition values and simulative assessments obtained through Python simulations.