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Errata to "Multicast Routing and Distance-Adaptive Spectrum Allocation in Elastic Optical Networks With Shared Protection"

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We would like to point out that in our paper [1], two figures, namely, Fig. 5 in page 4086 and Fig. 6 in page 4087, should be corrected. These two figures were derived based on a USNET network that had different link lengths from the USNET network mentioned in the paper. For each link, the length in the network we mistakenly used is shorter than or equal to that in the network mentioned in the paper. Therefore, the results presented in these two figures were not consistent with the USNET version referred to in the published paper. Here we provide the correct figures that are consistent with the USNET network mentioned in the paper. Please note that there is a discrepancy between the correct figures and the original figures in the published paper, although they look similar.

Firstly, the correct Fig. 5 is provided. The second paragraph of the second column in page 4086 relating to the figure should be replaced by the following paragraph.

We also consider 50 demands for the USNET network as shown in Fig. 5. With the increase in the number of destinations, the amount of required spectrum climbs. Also, for the ordering methods of the demands, an approach considering 4000 random sequences, i.e., APPF_G_4000, saves on average 4.8% spectrum compared to APPF_G_DO. Similar to the case in the n6s9 network, such a multi-iteration process does not improve much when there are many destinations in a multicast session, e.g., 18, as the average nodal degree of USNET is also low, i.e., 3.6.

Secondly, the correct Fig. 6 is also provided. The last paragraph of the first column in page 4087 relating to the figure should be replaced by the following paragraph.

The blocking performance is shown in Fig. 6. As we can see, the straightforward approach for dynamic systems, denoted as "Straightforward" in the figure, shows to have losses. The blocking probability increases with the increase of ρ. Specifically, when traffic load is light $\rho = 1$, the blocking probability is low, 1.209×10^{-4}. However, it rises dramatically to about 42% when $\rho = 10$, and a further increase of blocking probability can be observed for a larger ρ, i.e., heavier traffic load. In contrast, our approach, denoted as "APPF_G_4000" in the figure, does not have service blocking at all for any ρ. This is because that we use the APPF_G_4000 approach to minimize the maximum spectrum among the required spectrum in all links subject to the condition that all the given demands are accommodated. For a network where each fiber link is equipped with the minimized maximum required spectrum, each time a call arrives, the demand can always be served using the solution based on APPF_G_4000, and thus there will be no blocking.

These errors do not affect any other part of the paper including the conclusions.

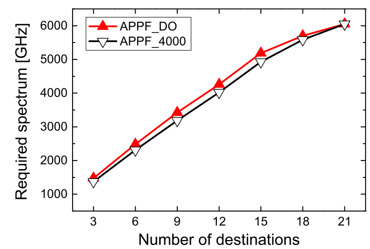

Fig. 5. Performance comparison for the USNET network (50 demands).

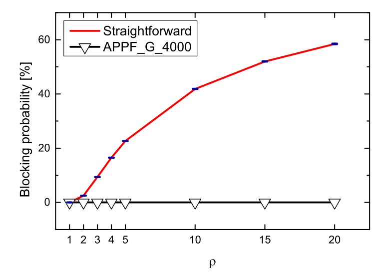

Fig. 6. Blocking probability comparison between the straightforward and our solutions versus ρ for the USNET network (50 demands).

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[1] A. Cai, J. Guo, R. Lin, G. Shen, and M. Zukerman, "Multicast routing and distance-adaptive spectrum allocation in elastic optical networks with shared protection," *J. Lightw. Technol.*, vol. 34, no. 17, pp. 4076–4088, Sep. 2016.