Optimization model for emergency vehicle allocation with integration dispatch

This paper aims to develop an optimization model for allocating emergency vehicles to fire departments. Our proposed model considers the integration of dispatch of emergency vehicles in a comparatively large area. We generated some random scenarios to consider uncertainty in the real world and conducted numerical experiments. However, the obtained solutions showed that usefulness of our model is very limited. Therefore, we solved other problems in which the allocation of EVs was fixed. The results showed that our model can find the optimal or good dispatch under the fixed allocation.

In this research, we consider the optimal allocation and dispatch problem for emergency vehicles (EVs). We propose an optimization model considers the integration of dispatch of emergency vehicles in a comparatively large area. We generated some random scenarios to consider uncertainty in the real world and conducted numerical experiments. However, the obtained solutions showed that usefulness of our model is very limited. Therefore, we solved other problems in which the allocation of EVs was fixed. The results showed that our model can find the optimal or good dispatch under the fixed allocation.