

عنوان مقاله:

Multi-Period Railway Network Design Model; Arc-based vs. Path-based Modeling

محل انتشار:

ششمین کنفرانس بین المللی پیشرفتهای اخیر در مهندسی راه آهن (سال: 1398)

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خلاصه مقاله:

Railway networks are one of the major parts of transportation infrastructure of the countries. Development of this network needs time and capital cost. Having an optimized plan for yearly investment on improvement of the network is a necessary thing. In this paper, to access a plan to implement development projects in the network and allocate the required budget for a specified period, a multi-period railway network design problem is modeled based on two approach, arc-based and path-based modeling. These models consider development projects (new lines construction and existing lines improvement), available budget in each period, origin -destination demand matrix for each period, block capacity and technical capacity. To show efficiency of the models and comparing these modeling approaches, the Iranian Railway Network is used in different scenarios of demand. The selected projects by the presented models and their usage percentage show the ability and efficiency of the model.

کلمات کلیدی:

Multi-period network design, Arc-based model, Path-based model, Mixed integer programming, Direct and indirect cost

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