

عنوان مقاله:

Application of Genetic Algorithm for Inspection Process in the PMS by Optimal Surveyed Inspection Units

محل انتشار:

چهاردهمین کنفرانس بین المللی مهندسی حمل و نقل و ترافیک (سال: 1394)

تعداد صفحات اصل مقاله: 13

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خلاصه مقاله:

Pavement is an important infrastructure that requires to maintenance and rehabilitation (M&R) activities in the pavement management system (PMS). An important part of PMS is the pavement inspection process. This process conducts for determining the pavement condition index (PCI) and starts from dividing a network to sections and continues to smaller units as inspection units. Surveying all of these is costly and time consuming for transportation agencies. So the strategies for selecting specific number of inspection units surveyed inspection units are applied for acceptably accurate pavement condition. In this paper develops genetic algorithm (GA) for determining the pavement condition with optimal number and place of surveyed inspection units. The GA with objective function of minimizing the total network error is coded in an m-file of MATLAB software. To demonstrate the effect of proposed GA for solving the present problem, a pavement network was applied as a case study that is located in district No.16 of Tehran municipality. The results illustrates that the methodology of this research can to present an automated framework for the pavement inspection process and it helps managers and inspectors for better decision making with minimum error and time.

کلمات کلیدی:

Pavement management system, Inspection process, Pavement condition index, Optimal Surveyed inspection units, Genetic algorithm, Maintenance and Rehabilitation

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