عنوان مقاله:

Highway Algorithm with Slope Parameters, Ground Line Coordinates and Peak Points

محل انتشار:

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خلاصه مقاله:

One of the most remarkable problems encountered during the highway profile design is the inability to make an optimum design of the grade line. Therefore, wasting time and uncontrolled work may be experienced due to hundreds of grade line design opportunities. The grade line optimization denotes the minimization of the total earthwork (excavation) amount by considering all design criteria. Today, the grade line is designed through heuristic approaches. However, due to the excessive number of mathematical operations, it causes a considerable loss of time. In recent years, researchers have conducted studies on grade line optimization through meta-heuristic algorithm methods. In this context, automatic detection of the peak points, their compatibility with the slope boundary conditions, and most importantly, the automatic detection of ground elevations on the land during the computation of the earthwork amount are the facts that cannot be ignored in terms of the optimum grade line design causing minimum cost. This is the only way to solve a grade line design through a multi-stage optimization technique. In this regard, a background study that compares an optimum grade line design with various optimization methods, and can be successfully used in grade line optimization in such a way to allow earthwork balancing, that is, balancing the cut and the fill, has been conducted.

کلمات کلیدی:

Highway, grade line, optimization, slope, meta-heuristic algorithm

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