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Research Note

Corrigendum to "Layout and size optimization of sewer networks by hybridizing the GHCA model with heuristic algorithms" [Scientia Iranica 22(5) (2015) 1742-1754]

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Abstract. In this paper, a General Hybrid Cellular Automata (GHCA) model is hybridized with two of the most reliable heuristic search methods, namely Genetic Algorithm (GA) and Ant Colony Optimization Algorithm (ACOA), for the simultaneous optimal design of layout and size of pumped and/or gravity sewer networks. GHCA model has recently been proposed by the authors for the optimal size determination of the sewer network with fixed layout. The model has been shown to be able to optimally design pumped and/or gravity sewer networks, if required. In proposed hybrid models, the heuristic search algorithms are used to create trial layout for the network while GHCA is used to design the network by determining the pipe diameters, pipe slopes, drop height, and pump height, if required. An ad-hoc engineering based method is used to determine feasible layouts by GA, while a Tree Growing Algorithm (TGA) is used to construct feasible layout using ACOA. The proposed hybrid models are tested against two benchmark sewer networks and the comparison of results to those of some existing methods indicates that proposed models, and in particular the ACOA-GHCA method, are more efficient and effective than some alternative methods for the optimal design of layout and size of sewer networks.

1. Introduction

The authors regret that the affiliation of the third author (R. Moeini) has been printed incorrectly as "Department of Civil Engineering, Faculty of Engineering, Isfahan University, Isfahan, Postal Cod: 81746-73441, Iran." and should be corrected as "Department of Civil Engineering, Faculty of Engineering, University of Isfahan, Isfahan, Postal Code: 81746-73441, Iran."

The authors would like to appologize for any inconvenience caused.

The main objective in the design of the sewer network problems is minimization of the construction and operation cost. The sewer network optimization problem can be divided in two problems of selection the network layout and sizing of network, determining the pipe diameters and slopes, for selected layout. These two problems, however, are not independent and should be handled simultaneously

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