

# Solving manufacturing cell design problems using the black hole algorithm

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In this paper we solve the Manufacturing Cell Design Problem. This problem considers the grouping of different machines into sets or cells with the objective of minimizing the movement of material. To solve this problem we use the Black Hole algorithm, a modern population-based metaheuristic that is inspired by the phenomenon of the same name. At each iteration of the search, the best candidate solution is selected to be the black hole and other candidate solutions, known as stars, are attracted by the black hole. If one of these stars get too close to the black hole it disappears, generating a new random star (solution). Our approach has been tested by using a well-known set of benchmark instances, reaching optimal values in all of them. © Springer International Publishing AG 2017.

Black Hole algorithm

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