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SCWOA: an effecient hybrid algorithm for parameter optimazation of multi-pass milling process

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Abstrak

In order to minimaze total production time in multi-pass milling process, selecting optimal values of the process parameters is of great importance. the parameter optimazation model of multipass milling process is a constrained non-linear programming formulation, due to nonlinearity and complexity of the mathematical model, developing new solution methodologies, which can provide efficient solutions, is essential, for this purpose, in this paper a novel hybrid alogrithm called sine-cosine whale optimazation alogrithm is proposed for parameter optimazation problem of multi-pass milling process in order to minimize total production time, the SCWOA uses exploration and exploitation abilities of the two basic alogrithms to achieve better solitions, to show efficiency of the proposed alogrithm, an experimental study is carried out and the result of the proposed alogrithm is compared to the ones in the literature, the fidings reveald that SCWOA provides promising solutions which result in significantly lower production time.