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Title: An Effective Partitional Clustering Algorithm based on New Clustering Validity Index

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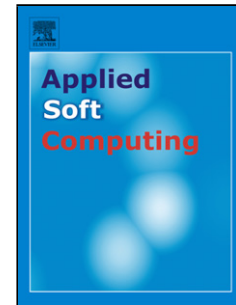
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Highlights

In order to quickly and precisely form the K_{opt} and the optimal clustering partitions for the target data sets, this paper proposes an improved partitional clustering algorithm based on the new designed clustering validity index. Specifically, this paper makes the following contributions:

- (1) The traditional K-means algorithm is improved by the density parameters based initial centers selection method;
- (2) A new clustering validity (VCVI) from point of view of spatial distribution of data sets is proposed;
- (3) A new partitional clustering algorithm is designed by integrating the improved K-means algorithm with the new introduced VCVI.

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