



## Iterated variable neighborhood search for the capacitated clustering problem

Submitted by Jin-Kao Hao on Wed, 12/07/2016 - 09:56

Titre Iterated variable neighborhood search for the capacitated clustering problem

Type de publication Article de revue

Auteur Lai, Xiangjing [1], Hao, Jin-Kao [2]

Pays Pays-Bas

Editeur Elsevier

Ville Amsterdam

Type Article scientifique dans une revue à comité de lecture

Année 2016

Langue Anglais

Date Novembre 2016

Pagination 102-120

Volume 56

Titre de la revue Engineering Applications of Artificial Intelligence

ISSN 1873-6769

Mots-clés Capacitated clustering [3], Grouping problem [4], Heuristics [5], Variable neighborhood search [6]

Résumé en anglais The NP-hard capacitated clustering problem (CCP) is a general model with a number of relevant applications. This paper proposes a highly effective iterated variable neighborhood search (IVNS) algorithm for solving the problem. IVNS combines an extended variable neighborhood descent method and a randomized shake procedure to explore effectively the search space. The computational results obtained on three sets of 133 benchmarks reveal that the proposed algorithm competes favorably with the state-of-the-art algorithms in the literature both in terms of solution quality and computational efficiency. In particular, IVNS discovers an improved best known result (new lower bounds) for 28 out of 83 most popular instances, while matching the current best known results for the remaining 55 instances. Several essential components of the proposed algorithm are investigated to understand their impacts on the performance of algorithm.

URL de la notice <http://okina.univ-angers.fr/publications/ua15233> [7]

DOI 10.1016/j.engappai.2016.08.004 [8]

Lien vers le document <http://www.sciencedirect.com/science/article/pii/S095219761630135X> [9]

---

### Liens

[1] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=25597>

[2] <http://okina.univ-angers.fr/jinkao.hao/publications>

- [3] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=21859>
- [4] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=21860>
- [5] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=3676>
- [6] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=21861>
- [7] <http://okina.univ-angers.fr/publications/ua15233>
- [8] <http://dx.doi.org/10.1016/j.engappai.2016.08.004>
- [9] <http://www.sciencedirect.com/science/article/pii/S095219761630135X>

Publié sur *Okina* (<http://okina.univ-angers.fr>)