



An effective multilevel tabu search approach for balanced graph partitioning

Submitted by Emmanuel Lemoine on Mon, 10/06/2014 - 17:47

Titre	An effective multilevel tabu search approach for balanced graph partitioning
Type de publication	Article de revue
Auteur	Benlic, Una [1], Hao, Jin-Kao [2]
Editeur	Elsevier
Type	Article scientifique dans une revue à comité de lecture
Année	2011
Langue	Anglais
Date	2011/07
Numéro	7
Pagination	1066 - 1075
Volume	38
Titre de la revue	Computers & Operations Research
ISSN	0305-0548
Mots-clés	Balanced partitioning [3], Iterated tabu search [4], Multilevel approach [5]
Résumé en anglais	<p>Graph partitioning is one of the fundamental NP-complete problems which is widely applied in many domains, such as VLSI design, image segmentation, data mining, etc. Given a graph $G=(V,E)$, the balanced k-partitioning problem consists in partitioning the vertex set V into k disjoint subsets of about the same size, such that the number of cutting edges is minimized. In this paper, we present a multilevel algorithm for balanced partition, which integrates a powerful refinement procedure based on tabu search with periodic perturbations. Experimental evaluations on a wide collection of benchmark graphs show that the proposed approach not only competes very favorably with the two well-known partitioning packages METIS and CHACO, but also improves more than two thirds of the best balanced partitions ever reported in the literature.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua4253 [6]
DOI	10.1016/j.cor.2010.10.007 [7]
Lien vers le document	http://dx.doi.org/10.1016/j.cor.2010.10.007 [7]

Liens

- [1] [http://okina.univ-angers.fr/publications?f\[author\]=7482](http://okina.univ-angers.fr/publications?f[author]=7482)
- [2] <http://okina.univ-angers.fr/jinkao.hao/publications>
- [3] [http://okina.univ-angers.fr/publications?f\[keyword\]=8664](http://okina.univ-angers.fr/publications?f[keyword]=8664)
- [4] [http://okina.univ-angers.fr/publications?f\[keyword\]=8665](http://okina.univ-angers.fr/publications?f[keyword]=8665)
- [5] [http://okina.univ-angers.fr/publications?f\[keyword\]=8666](http://okina.univ-angers.fr/publications?f[keyword]=8666)

[6] <http://okina.univ-angers.fr/publications/ua4253>

[7] <http://dx.doi.org/10.1016/j.cor.2010.10.007>

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