



## Informed Reactive Tabu Search for Graph Coloring

Submitted by Jin-Kao Hao on Mon, 01/26/2015 - 09:56

Titre	Informed Reactive Tabu Search for Graph Coloring
Type de publication	Article de revue
Auteur	Cosmin Porumbel, Daniel [1], Hao, Jin-Kao [2], Kuntz, Pascale [3]
Editeur	World Scientific Publishing
Type	Article scientifique dans une revue à comité de lecture
Année	2013
Langue	Anglais
Date	Jan-08-2013
Numéro	04
Pagination	1350010
Volume	30
Titre de la revue	Asia-Pacific Journal of Operational Research
ISSN	0217-5959
Mots-clés	Discriminative evaluation function; tabu search; heuristics; graph coloring. [4]
Résumé en anglais	<p>Tabu search (TS) has always been a very popular algorithm for graph coloring, both as a stand-alone optimizer as well as a subroutine inside population-based hybrid methods. We present two TS extensions that could allow previous TS algorithms to improve their behavior at almost no additional computational cost. First, we integrate two new evaluation functions which employ supplementary (structural or dynamic) information in addition to the conventional objective function (the number of edges with both ends of the same color). These new evaluation functions allow the search process to differentiate configurations not distinguished by the conventional evaluation function. The second extension concerns a reactive mechanism for improving the tabu list management. Theoretical arguments show that this reactive component completely eliminates the risk of getting blocked looping on plateaus. Numerical experiments show that the two proposed TS extensions can be very useful inside a stand-alone TS optimizer, as well as inside TS subroutines of state-of-the-art hybrid methods.</p>
URL de la notice	<a href="http://okina.univ-angers.fr/publications/ua7054">http://okina.univ-angers.fr/publications/ua7054</a> [5]
DOI	10.1142/S0217595913500103 [6]
Lien vers le document	<a href="http://dx.doi.org/10.1142/S0217595913500103">http://dx.doi.org/10.1142/S0217595913500103</a> [6]
Titre abrégé	Asia Pac. J. Oper. Res.

### Liens

[1] [http://okina.univ-angers.fr/publications?f\[author\]=10965](http://okina.univ-angers.fr/publications?f[author]=10965)

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

[3] [http://okina.univ-angers.fr/publications?f\[author\]=7537](http://okina.univ-angers.fr/publications?f[author]=7537)

[4] [http://okina.univ-angers.fr/publications?f\[keyword\]=10897](http://okina.univ-angers.fr/publications?f[keyword]=10897)

[5] <http://okina.univ-angers.fr/publications/ua7054>

[6] <http://dx.doi.org/10.1142/S0217595913500103>

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