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A Distance-Based Information Preservation Tree Crossover for the Maximum Parsimony Problem

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Résumé en anglais	The Maximum Parsimony problem aims at reconstructing a phylogenetic tree from DNA sequences while minimizing the number of evolutionary changes. Known to be NP-complete, the MP problem has many applications. This paper introduces a Distance-based Information Preservation (DiBIP) Tree Crossover. Contrary to previous crossover operators, DiBIP uses a distance measure to characterize the semantic information of a phylogenetic tree and ensures the preservation of distance related properties between parents and offspring. The performance of DiBIP is assessed with a mimetic algorithm on a set of 28 benchmark instances from the literature. Comparisons with 3 state-of-the-art algorithms show very competitive results of the proposed approach with improvement of some previously best results found.
URL de la notice	http://okina.univ-angers.fr/publications/ua7692 [4]
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Liens

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