The Scheduling Algorithms for Two-Stage Grid Models

Amelec Viloria, Omar Bonerge Pineda Lezama, Karol Martinez, Nohora Mercado

Abstract

This paper deals with the scheduling of parallel works in a two-stage hierarchical grid. In this configuration, one of the great challenges is to assign the tasks in order to allow an efficient use of resources, while satisfying other criteria. In general, the optimization criteria are often in conflict. For solving this problem, a bi-objective genetic algorithm is proposed presenting an experimental study of six cross operators, and three mutation operators. The most influential parameters are determined through a statistical analysis of multifactorial variance which compares the proposal with five allocation strategies found in the literature.

Keywords
Algorithms, Programming, Genetic algorithm