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WORKING PAPER

An Artificial Immune System Algorithm for the Resource Availability Cost Problem

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Abstract

In this paper, an Artificial Immune System (AIS) algorithm for the resource availability cost problem (RACP) is presented, in which the total cost of the (unlimited) renewable resources required to complete the project by a pre-specified project deadline should be minimized. The AIS algorithm makes use of mechanisms inspired by the vertebrate immune system and includes different algorithmic components, such as a new fitness function, a probability function for the composition of the capacity lists, and a K-means density function in order to avoid premature convergence. All components are explained in detail and computational results for the RACP are presented.