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Hierarchal scheduling in Grid Systems

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Abstract: This paper proposes hierarchal scheduling schemes for grid systems: a self-discovery scheme for the resource discovery stage and an adaptive child scheduling method for the resource selection stage. In addition, we propose three rescheduling algorithms: the butterfly, fallback and load-balance. We also propose a hybrid system to combine the proposed hierarchal schemes with the well-known peer-to-peer (P2P) principle. We compare the performance of the proposed schemes against the P2P systems with respect to a set of predefined metrics.