

This document details the mathematical formulation and computational implementation of an algorithm for workload (data) partitioning in dynamic heterogeneous architectures. The partitioning is formulated as an optimization problem captured by a quadratic cost function that penalizes the difference between the application requirements (e.g., maximum execution time) and the current performance of the available computational resources. The adaptive filter-based algorithm is embedded in the system manager in order to manage the data allocation at runtime. Preliminary results in a simple scenario with one CPU and one GPU show that the proposed approach successfully estimates the best data partitioning when facing changes in the application requirements.