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Title: Parallel Numerical Algorithms for Heterogeneous Parallel Computers

Abstract: Not all the numerical algorithms parallelize equally well on Heterogeneous Parallel Computers (HTPC). A typical example is the QR iteration for computing eigenvalues of non-symmetric matrices. This algorithm is difficult to parallelize with good performance in HTCP. An interesting option for HTPC is to choose those algorithms which are more adequate for parallelization on this kind of machines, although they may be not the most efficient in sequential computers or in homogeneous parallel computers. In this presentation we show our work in this area and we present and compare different load balances schemes and their corresponding implementations. Experimental results show that only algorithms that take into account the heterogeneity of the system when balancing the workload obtain optimum performance.

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