

## Publication

### A distributed chunk calculation approach for self-scheduling of parallel applications on distributed-memory systems

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**Author(s)** Eleliemy, Ahmed; Ciorba, Florina M.

**Author(s) at UniBasel** [Eleliemy, Ahmed Hamdy Mohamed](#) ; [Ciorba, Florina M.](#) ;

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Loop scheduling techniques aim to achieve load-balanced executions of scientific applications. Dynamic loop self-scheduling (DLS) libraries for distributed-memory systems are typically MPI-based and employ a centralized chunk calculation approach (CCA) to assign variably-sized chunks of loop iterations. We present a distributed chunk calculation approach (DCA) that supports various types of DLS techniques. Using both CCA and DCA, twelve DLS techniques are implemented and evaluated in different CPU slowdown scenarios. The results show that the DLS techniques implemented using DCA outperform their corresponding ones implemented with CCA, especially in extreme system slowdown scenarios.

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