

## Exploiting Nested Task-Parallelism in the LU Factorization of Hierarchical Matrices

*Tuesday, 5 November 2019 09:50 (30 minutes)*

Hierarchical matrices (H-matrices) lie in-between dense and sparse scenarios. Therefore, it is natural to tackle the LU factorization of H-Matrices via a task-parallel approach, which has recently reported successful results for related linear algebra problems. In this work, we will describe how to discover the data-flow parallelism intrinsic to the operation at execution time, via the analysis of data dependencies based on the memory addresses of the tasks' operands. This is especially challenging for H-matrices, as the data structures dimensions vary during the execution.

**Primary authors:** CARRATALÁ-SÁEZ, Rocío (Universitat Jaume I); QUINTANA ORTÍ, Enrique S. (Universitat Politècnica de València)

**Presenter:** CARRATALÁ-SÁEZ, Rocío (Universitat Jaume I)

**Session Classification:** Day I