Finding extremal sets on the GPU

Fort, Marta; Sellares, J. Antoni

The extremal sets of a family $F$ of sets consist of all sets of $F$ that are maximal or minimal with respect to the partial order induced by the subset relation in $F$. In this paper we present efficient parallel GPU-based algorithms, designed under CUDA architecture, for finding the extremal sets of a family $F$ of sets. The complexity analysis of the presented algorithms together with experimental results showing the efficiency and scalability of the approach is provided.

http://dx.doi.org/10.1016/j.jpdc.2013.07.004