Introduction

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Parallelism has been traditionally at the base of high-end complex platforms. In recent years, however, the emergence of novel technologies and computing systems has broadened considerably the spectrum of applications where parallel computation plays a fundamental role: on the one hand, chip manufacturers are shifting their focus towards new designs incorporating multiple cores within individual chips; on the other, large-scale networks are becoming the underlying infrastructures of innovative computing and data access platforms. Both traditional and emerging scenarios pose a number of challenging theoretical questions regarding architectures, models, and algorithmic strategies for effective parallel computing. Topic 12 is a suitable venue where researchers can discuss these questions and present their new achievements.

This year, seven papers were submitted to the topic, targeting a wide range of problems. After a thorough revision process, two papers were accepted for presentation at the conference, resulting in about a 29% acceptance rate.

The first paper, *Implementing Parallel Google Map-Reduce in Eden*, by J. Berthold, M. Dieterle, and R. Loogen, discusses efficient parallel implementations of the Google map-reduce paradigm in Eden, a parallel extension of the Haskell language, and reports experimental results on some case studies. The paper offers also a critical perspective on the generality of the paradigm as a programming model. The second paper, *A Lower Bound for Oblivious Dimensional Routing*, by A. Osterloh, studies a fundamental packet routing primitive, namely k - k routing, on multidimensional meshes, proving a tight (asymptotic) lower bound on the number of steps it requires when the number d of dimensions is odd and when routing paths are restricted to traverse edges of any given dimension, consecutively. The result generalizes a known lower bound for $d = 3$.

* Topic chairs.