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**Parallel Bicubic Spatial Interpolation Algorithm Based On Mapreduce Hadoop**

Madina Mansurova<sup>1</sup>, Darkhan Akhmed-Zaki<sup>2</sup>, Bolatzhan Kumalakov<sup>3</sup>, Bazargul Matkerim<sup>4</sup>

**Abstract.** The goal of this study is the implementation of parallel bicubic spatial interpolation algorithm. In view of the problem that massive spatial data interpolation is a complex and time-consuming computing process, we propose a parallel bicubic spatial interpolation algorithm, which is based on MapReduce programming model and is implemented on the Hadoop platform [2]. We introduce the principle of the bicubic interpolation algorithm based on MapReduce, and then we provide detail of implementing the parallel bicubic spatial interpolation algorithm with MapReduce Hadoop technology [3]. We conduct the experiments to compare the MapReduce implementation method by measuring the performance over standard sequential implementation and MPI implementation. The experimental results show that the MapReduce-based parallel algorithm can achieve high speedup and prove the effectiveness of MapReduce Hadoop technology for real-time processing of massive spatial data interpolation.

**Keywords.** Bicubic spatial interpolation, MapReduce, Hadoop platform, MPI implementation, MapReduce-based parallel algorithm.

**References**

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<sup>1</sup> Al-Farabi Kazakh National University, Almaty, Kazakhstan, mansurova01@mail.ru

<sup>2</sup> Al-Farabi Kazakh National University, Almaty, Kazakhstan, Darhan.Ahmed-Zaki@kaznu.kz

<sup>3</sup> Al-Farabi Kazakh National University, Almaty, Kazakhstan, b.kumalakov@gmail.com

<sup>4</sup> Al-Farabi Kazakh National University, Almaty, Kazakhstan, bazargulmm@gmail.com