Performance Analysis of a Parallel Denoising Algorithm on Intel Xeon Computer System

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This paper presents an experimental performance study of a parallel implementation of the Poissonian image restoration algorithm. Hybrid parallelization based on MPI and OpenMP standards is investigated. The implementation is tested for high-resolution radiographic images on a supercomputer using Intel Xeon processors as well as Intel Xeon Phi coprocessors. The experimental results show an essential improvement when running experiments for a variety of problem sizes and number of threads.

Keywords: Anscombe transform, image restoration, parallel algorithm, Intel Xeon Phi coprocessor.