Abstract

The goal of this paper is to calculate the perfor-mance of the parallel scheme of non-hydrostatic GravitationalSurface Wave using GPU based on CUDA. Here, Navier-Stokesequations used as a model which is simplified by removing non-linear and friction terms. In this paper, simple finite differentmethod is used as a numerical method. The discretization ofpressure, vertical and horizontal velocity variables uses ArakawaC-Grid which leads to solve Poisson equation. The numericalsimulation of propagating waves generated by surface pressureis given. The parallel computing is shown satisfied. Using largenumber of grids (1024,512), serial and parallel CPU time areobserved 20197.66 and 6521.85 seconds respectively. Thereforethe usage of parallel computing in this simulation producesspeedup approximately 3 times of serial computing.