

ADVANCES IN THE SOLUTION OF NS EQUATIONS IN GPU HARDWARE

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Abstract. Graphic Processing Units have received much attention in last years. Compute-intensive algorithms operating on multidimensional arrays that have nearest neighbor dependency and/or exploit data locality can achieve massive speedups. An incompressible flow solver has been presented by the authors including a Fractional Step Method, with a Fast Fourier Transform solver for the Poisson stage. In this presentation we describe some improvements to the algorithm, including a parallel implementation of the Fast Marching algorithm for free surface flows.