

Speed-up technique of a MPS elasticity analysis with different particle size

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A MPS (moving particle semi-implicit) method was developed by Koshizuka et al (1996) in order to simulate in-compressive fluid. Then, this method was applied for an elastic bodies and elastic body simulations by a MPS method have been studying. For example, Takekawa et al calculated elastic wave propagation and showed it was consistent with a finite difference method. By the way, a weak point of a MPS method is that computation time is longer than a finite difference method. It is a big problem when large-scale systems like faults and subduction zones are calculated. In order to shorten computation time, it is the best way to decrease the number of particles. It is thought that the less numbers, the more errors, however there is no quantitative researches on this point. And the wave length must limit the particle distances, and also there is no research. In this presentation, we will show these two points quantitatively. And we will mention the most appropriate value of