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A GPU Based Polyhedral Particle DEM Transport Code

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Abstract content
 (Max 300 words)
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Discrete Element (DEM) simulations are useful in a number of engineering disciplines such as mining, agriculture, etc. However the computational cost of discrete methods limits the number and detail of particles that can be simulated in a reasonable time frame without the use of a dedicated CPU cluster. This paper introduces a novel DEM based particle simulation code (BLAZE-DEM) that is capable of simulating millions of particles on a desktop computer utilizing a NVIDIA Kepler Graphical Processor Unit (GPU) via the CUDA programming model. BLAZE-DEM is 4 times faster than any other published code and capable of simulating over 50 million polyhedral particles compared to just 256 thousand by other codes.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD)?

PhD

Main supervisor (name and email) and his / her institution

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Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

Yes

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