

## AN ASYNCHRONOUS EXPLICIT DYNAMICS CONTACT ALGORITHM

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### ABSTRACT

The use of multiple-time-step integrators can provide substantial computational savings over traditional one-time-step methods for the simulation of solid dynamics, while maintaining desirable properties, such as energy conservation. Contact phenomena generally require the adoption of either an implicit algorithm or the use of unacceptably small time steps to prevent large amount of numerical dissipation from being introduced.

In this talk we will introduce a new explicit dynamic contact algorithm that, by taking advantage of asynchronous time stepping (AVI), delivers an outstanding energy performance at a much more acceptable computational cost. We demonstrate the performance of the numerical method with several three-dimensional examples.