Smoothed Particle Hydrodynamics: Methodology and Applications

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Smoothed particle hydrodynamics, a meshless Lagrangian computational method, was originally developed in astrophysics, but has recently been applied to a number of fields, including hydrodynamics. For free surface flows, the method is simpler to apply than traditional computational techniques, as the free surface equires no special treatment---splashing and wave breaking present no difficulties.

The talk will discuss the development of the method for fluid flow, and then discuss a number of preliminary applications, including water waves solitary wave breaking, overtopping, landslide-induced tsunamis), wave-structure interaction, and flow past submerged objects (hydrofoil).

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11:00 a.m., 234 Ames Hall