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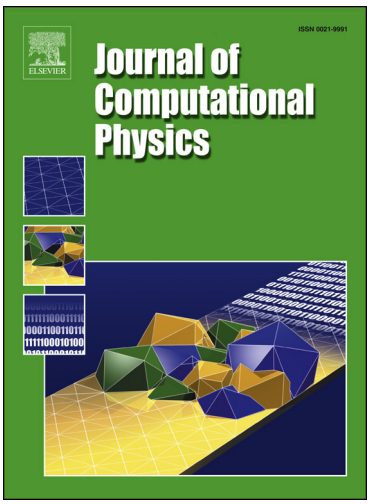

A differential variational approach for handling fluid-solid interaction problems via Smoothed Particle Hydrodynamics

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Highlights

- The fluid incompressibility is enforced via kinematic (algebraic) constraints.
- The kinematic constraints formulated in terms of the position of the SPH particles.
- The formulation allows for stable integration at large time steps.
- Monolithic time integration – the fluid and solid phases use same time integrator.
- Approach demonstrated in conjunction with large, real-life applications.

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