Fluid simulation

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Particle-based Viscoelastic Fluid Simulation (2005)

- By: Simon Clavet, Philippe Beaudoin,

  and Pierre Poulin

- Particle based
- Highly customizable

Algorithm 1: Simulation step.

```
foreach particle i
    // apply gravity
    v_i ← v_i + Δt g
// modify velocities with pairwise viscosity impulses
applyViscosity                          // (Section 5.3)
foreach particle i
    // save previous position
    x_i^prev ← x_i
    // advance to predicted position
    x_i ← x_i + Δt v_i
// add and remove springs, change rest lengths
adjustSprings                           // (Section 5.2)
// modify positions according to springs,
// double density relaxation, and collisions
applySpringDisplacements                // (Section 5.1)
doubleDensityRelaxation                 // (Section 4)
resolveCollisions                       // (Section 6)
foreach particle i
    // use previous position to compute next velocity
    v_i ← (x_i − x_i^prev)/Δt
```

What we did

- Water in Unity
- Boat
- More assets
- Some extra minor features

Demo time