Real-Time Eulerian Fluid Sim

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Real-Time Eulerian Water Simulation Using a Restricted Tall Cell Grid
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Milestone 1

- Renders fluid simulation with sphere marching
- Basic optimizations and Blinn-Phong shading

Milestone 1

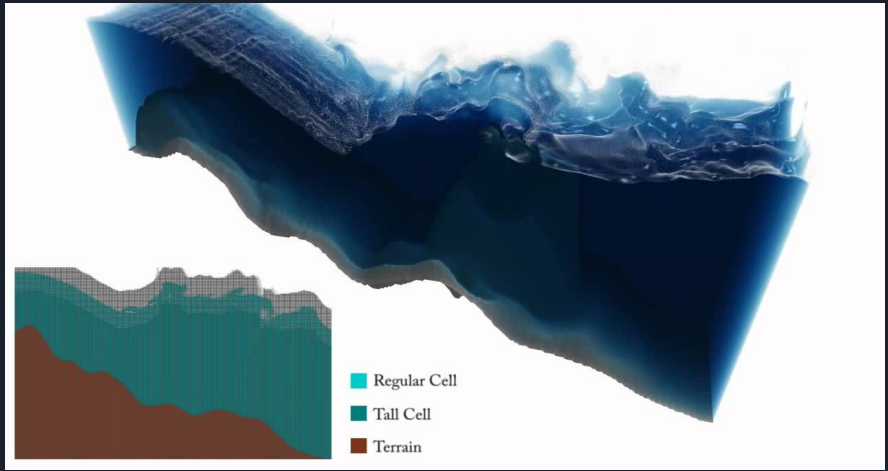
Milestone 1

Milestone 1

Remaining Work

Tall Cells

- Adaptive MAC grid with tall cells to reduce computation below the surface
- Transition cells between regular and tall depending on distance to surface



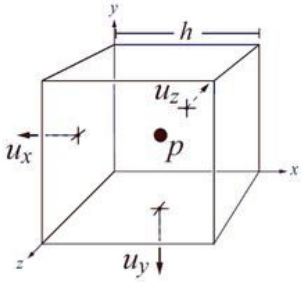


Figure 1: A MAC grid cell. Velocity components, u_x, u_y and u_z, are stored on the minimal faces of the cell. Pressure, p, is stored at the cell center.

Textures

- Use water/wave textures with modification depending on surface deformation and velocity

Clustering

- Use marker particle clusters to reduce cost of sphere marching

Scalability

- Allow for real-time water simulation in a larger environment
- Blend fake/simple simulation with main simulation