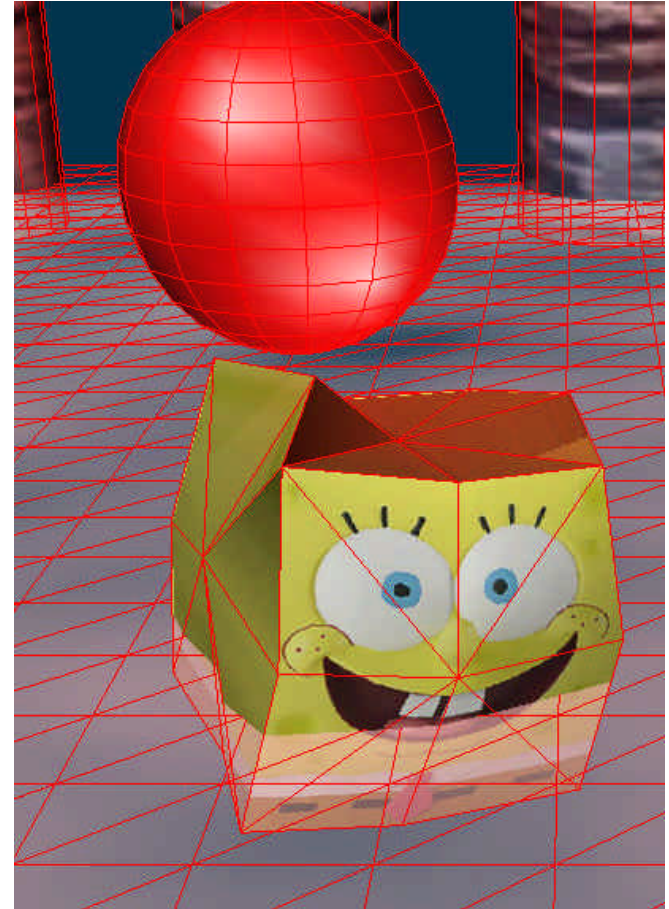SPONGEBALL

Bálint Miklós, Ursina Caluori

Physics

- **Mass Point System**
  - Leap frog integration
  - Damping of springs and mass points
  - Read model from file
- **Balls**
  - The simplest possible rigid body
  - No rotation
  - Leap frog integration

Collisions

- With penetration
- Force driven
  - Proportinal with penetration depth
  - For every pair of object classes tune the force magnitude
  - For cloud smaller forces: "soft" collisions
- Works fine for simple shapes

Rendering

- Cloud (Ken Perlin's method)
  - Generate random particles in 3D
  - Apply blur and noise for density generation
  - Density corresponds to opacity
  - Project on plane to generate texture
- Textures
- Light sources
  - Balls carry point light sources

Implementation

- Coin3d and C++
- Dynamic scenegraph
- Simulation with higher frequency than rendering

DEMO