Games and Viz

(as opposed to Viz and Games)

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Is there anything out there now?

Two Ways To Slice It

- How SciViz is affected by Games
  - The major focus of this panel
  - Briefly mention one issue
- How Games are affected by SciViz
  - in User Interfaces
    - HUDs, maps, power meters, graphs
  - during development
    - debugging, generating, testing

SciViz versus Games

- Do game requirements differ from viz requirements, especially for 3D HW?
  - Microsoft thought/marketed this with early D3D
  - not true then, or now
- High end game developers want:
  - high precision & high dynamic range pixels & pipelines, subpixel/texel accuracy, FSAA, etc.

Games and Viz
User Interface

- viz, CHI, cartography, etc.
- "lots" of data to display
  - multiple dimensions of continuous/discrete data
    - strength, health, mana, units, etc.
    - equipment, location
  - overlays and HUDs
    - automap, targeting, information, etc.
  - views of data
    - occlusion, removal & transparency
    - relationships between characters

Automap, Overlay, Health, etc.

Occlusion and Transparency

Maps, Inventory, Stats

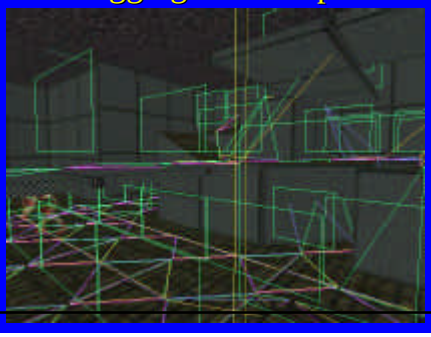
Games and Viz

Viz as Development Tool

- debugging, generating, testing
- mostly fumbling around, doing the obvious thing
  - drawing lines, using colors, maybe graphs
  - sometimes realtime, sometimes offline

Debugging

Debugging with Graphics!



Demos

- in-game debugging HUD graphs for time varying variables
- standalone viz app for understanding and developing math for a game

Conclusions

- Games definitely affect Scientific Visualization
- Viz could have direct impact on games, especially on development
  - outreach from viz community with concrete improvements would be welcome
    - not much awareness of viz as relevant
    - ad hoc or general solutions? general guidelines
    - not “large” datasets by viz standards