

# CSCI-4961/6961: 3D Computer Graphics

Class 25: November 27, 2006

## Precomputed Radiance Transfer

### Announcements

- Homework 5 is due today.
- Project 4 is due by 11:59:59pm on Monday, December 4. Please see particle system links off the Project 4 web page.
- The Final Exam is on Thursday, December 7 at 9:00am–noon.

### Today's Class

Precomputed Radiance Transfer (PRT) is a technique used to render a realistic scene in real time with complex light phenomena precomputed. Unlike radiosity which can be used to determine the diffuse lighting of the scene, PRT allows dynamic changes to the lighting environment.

1. Radiance, Irradiance, Transfer
2. Spherical Harmonics
3. Irradiance Volumes

### Reading

Chapter 10.12 of Hearn and Baker (Radiosity Lighting Model).

See <http://developer.nvidia.com/attach/6568> for *An Introduction to BRDF-based Lighting*.

See <http://www.research.scea.com/gdc2003/spherical-harmonic-lighting.pdf> for *Spherical Harmonic Lighting: The Gritty Details*

### Activity

See <http://people.csail.mit.edu/kautz/PRTCOURSE/> for more info.

### Next Class

Collision detection.