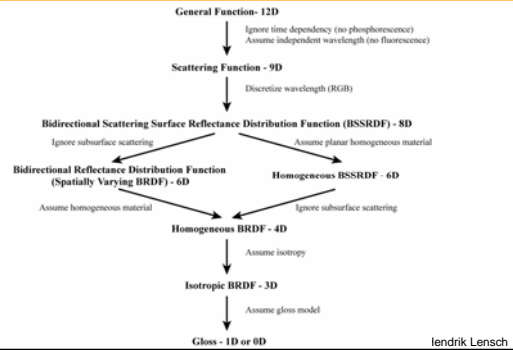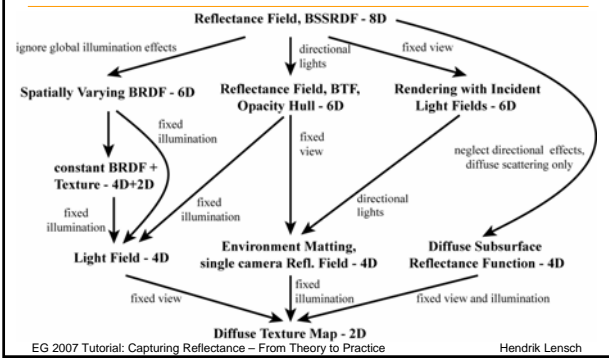EUROGRAPHICS 2007

Tutorial 6
Capturing Reflectance
From Theory to Practice

Hendrik P.A. Lensch, MPI Informatik

Michael Goesele, TU Darmstadt

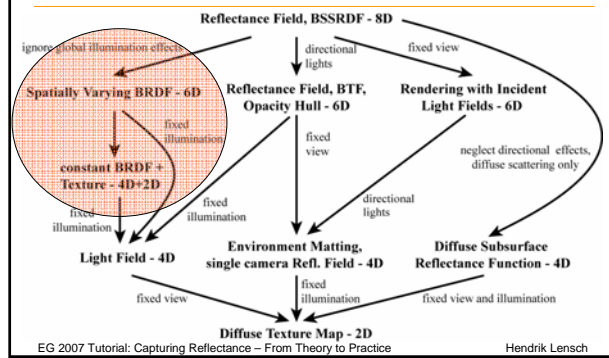Gero Müller, Bonn University

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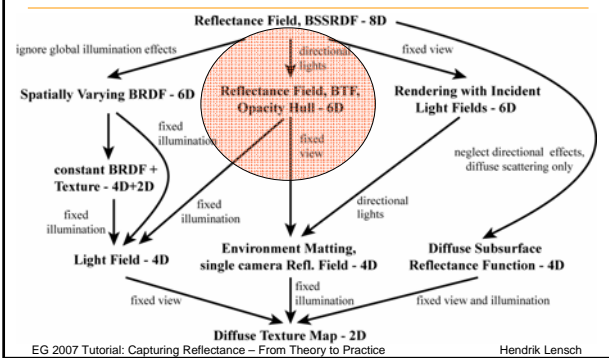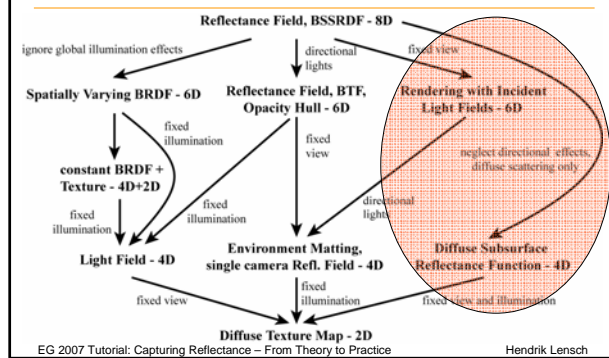## Taxonomy of Appearance Representations

General Function- 12D

Ignore time dependency (no phosphorescence)
Assume independent wavelength (no fluorescence)

Scattering Function - 9D

Discretize wavelength (RGB)

Bidirectional Scattering Surface Reflectance Distribution Function (BSSRDF) - 8D

Ignore subsurface scattering   Assume planar homogeneous material

Bidirectional Reflectance Distribution Function (Spatially Varying BRDF) - 6D   Homogeneous BSSRDF - 6D

Assume homogeneous material   Ignore subsurface scattering

Homogeneous BRDF - 4D

Assume isotropy

Isotropic BRDF - 3D

Assume gloss model

Gloss - 1D or 0D

Hendrik Lensch

Acquisition Taxonomy

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Reflectance Sharing

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Reflectance Fields for Distant Lights

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Near-Field Reflectance Fields

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More …

- … fun stuff on realistic materials also presented in other sessions at EUROGRAPHICS 2007
- check your program!

Course Web Pages

- find updated content at

  http://www.mpi-inf.mpg.de/resources/ eg07-capturing-reflectance

Summary

- densely sampling 8D functions almost impossible
- less dimensions might be sufficient for specific tasks / materials