

Tutorial

Introduction To LucidShape

Overview

1: Simulation I

- **Basics of forward ray trace**
 - The simulation setup
 - First simple example
- **Different ray trace methods**
 - Monte Carlo
 - Light Mapping
 - Interactive Ray trace
- **Basic Material types**
 - Emitter: lambert
 - Actors: [diffuse] specular, refractive
 - Sensors: lumen, lux, cd/m²
- **Complete Example**
 - CAD data import, export and assign surface properties
 - Simulation, Analysis, photometric test tables
- **Ray files**
 - Theory, Sensor, Light source

2a: Functional Geometry

- ✓ **Theory for profile curves and surfaces**
 - ✓ Practice with curve and surface test suites

- ✓ **The 3 major mathematical methods and application**
 - ✓ The PS (procedural surface) application
 - ✓ The MF (macro focal) application
 - ✓ The PCS (poly curve system) application

- ✓ **The PS application**
 - ✓ Various light function
 - ✓ Reflector, refractor, rectangle, round
 - ✓ Practice

2b: Functional Geometry

- ✓ **The MF (macro focal) application**
 - ✓ Various light function, cutoff lines
 - ✓ Reflector, refractor
 - ✓ based on free grid, styling issues
 - ✓ Practice

- ✓ **The PCS (poly curve system) application**
 - ✓ PES headlamp
 - ✓ LED concentrator
 - ✓ Various lens types: aspherical, fresnel, ...
 - ✓ styling issues
 - ✓ Practice

- ✓ **Collimator lens**

- ✓ **Compensation of ray deviation; “neutral” surfaces**

3a: Simulation II

- **Advanced Material types**
 - **Emitters:** from LID data, curve, surface
 - **Actors:** BSDF
 - **Sensors:** ray history
- **Lit Appearance**
 - **Flow sensor**
 - **Luminance camera**
 - **Luminance images**
- **Analysis**
 - **gather light**
 - **reverse sensor light**
- **Spectral simulation**

3b: General

- **Benchmark TC4-45**
- **LID Editor for beam pattern combination**
- **Global Settings**
- **Ray trace spooler**
- **CAD like operations in LucidShape**
- **Data conversion**
 - **NURBS to Mesh surface**