E04 – Lights and BRDF models

This example shows how the light models and BRDFs presented during the lessons works.

`index.html`, shows an object on screen: you can choose the Earth, a house or a starship clicking with the mouse on the corresponding text at the bottom of the screen. The application *supports up to three lights*, that can be selected from a dropdown menu. The part below the light selection, allows to define the parameters of the corresponding source. With the controls at the bottom of the page, you can change the light type (direct, point or spot). Light sources can be switched off by selecting "none". The page allows also to set the ambient lighting (no ambient lighting, single constant value, hemispheric ambient lighting, Spherical Harmonics), the diffuse component of the BRDF (either Lambert, toon, or Oren-Nayar) and the specular component of the BRDF (no specular, Phong, Blinn and Toon with either Phonf or Blinn computation, or Cook-Torrance).

Depending on the type of element chosen, the input interface at the bottom of the screen will change accordingly, allowing you set the proper parameters to characterize colors and other properties. The "texture" slider, will change the color of the object from being taken from a texture, or from the constants defined in the interface.

The application also allows to set the material emission and its response to the ambient lighting. Models can also be turned around using the corresponding slider at the top of the control table.

The right part of the screen shows an external view of the scene, allowing to see the position of the camera and of the lights. It can be turned on and off by pressing the "Toggle Ext. View" button on the top left corner of the control table.

You can reset to the initial state by clicking with the mouse on the corresponding text.