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BRDFLab: A general system for designing BRDFs

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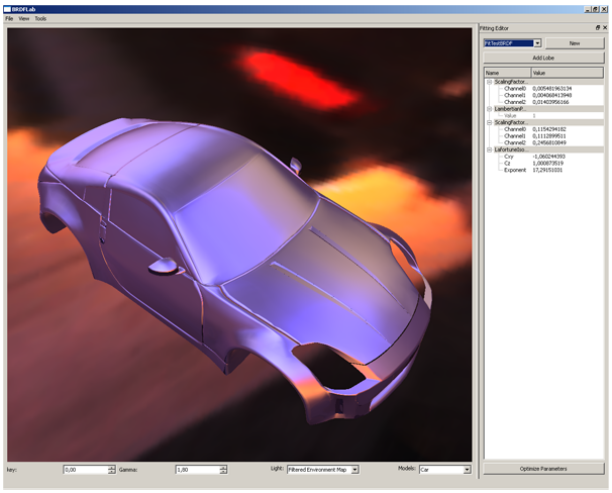

This paper introduces a novel system for interactive modeling and designing of arbitrary BRDFs. The system is able to deal with BRDFs de?ned in a variety of forms, such as analytical models, measured data or data obtained by simulation. The system also allows designing BRDFs from scratch using a combination of different analytical lobes. Using the programmable graphics hardware, it then performs interactive display of the designed BRDF, and its rendering on objects lit by complex illumination. The system also allows the fitting of an input BRDF de?ned in any form to our analytical lobe combination, so that it can be efficiently evaluated with GPU based rendering. The idea behind this work is to make available a general system for designing, fitting and rendering BRDFs, that is intuitive and interactive in nature. We plan to use this as a tool for simulation and modeling of complex physically-based BRDFs, and thus provide access to a larger variety of material models to the rendering community.

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