

laden gemeinsam zum

GASTVORTRAG

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“Cascaded Light Propagation Volumes for Real-Time Indirect Illumination”

Abstract:

This paper introduces a new scalable technique for approximating indirect illumination in fully dynamic scenes for real-time applications, such as video games. We use lattices and spherical harmonics to represent the spatial and angular distribution of light in the scene. Our technique does not require any precomputation and handles large scenes with nested lattices. It is primarily targeted at rendering single-bounce indirect illumination with occlusion, but can be extended to handle multiple bounces and participating media. We demonstrate that our method produces plausible results even when running on current game console hardware with a budget of only a few milliseconds for performing all computation steps for indirect lighting. We evaluate our technique and show it in combination with a variety of popular real-time rendering techniques.

Biography:

Anton Kaplanyan is a Lead Researcher at Crytek. During the development of CryEngine 3 he was responsible for multiple researches on graphics and porting of CryEngine 2 to the current generation of consoles. Currently he is busy working on the next iteration of the engine to keep pushing both DX11 and next-gen console technology. Additionally he is working on his PhD within Stuttgart University. Prior to joining Crytek he received his M.S. in Computer Science at Moscow University of Electronic Engineering, Russia in early 2007.

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