COMPUTER GRAPHICS
forum

Event Report

CGForum 2009 Cover Image

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The caustics underneath the sphere and leaf are generated using an enhanced photon mapping algorithm described in a paper we have submitted to Eurographics 2009. The advantage of this approach is that low-noise radiance estimates may be achieved using very low bandwidth kernels. The caustic photon map in this scene contains 120,000 photons and only 50 are used in each radiance estimate. We can achieve good-quality results with as few as 20 photons. This results in the reduction of proximity, topology and boundary bias and also reduces the time required to render caustic illumination.

The scene was created using a scan of a real leaf, post-processed in Photoshop and overlaid onto a translucent scattering dielectric film perturbed using a fractal noise function. Clip, gloss and bump maps were then created. Modelling was done using 3DStudio MAX and rendered using my own global illumination rendering platform.