MLT Examples

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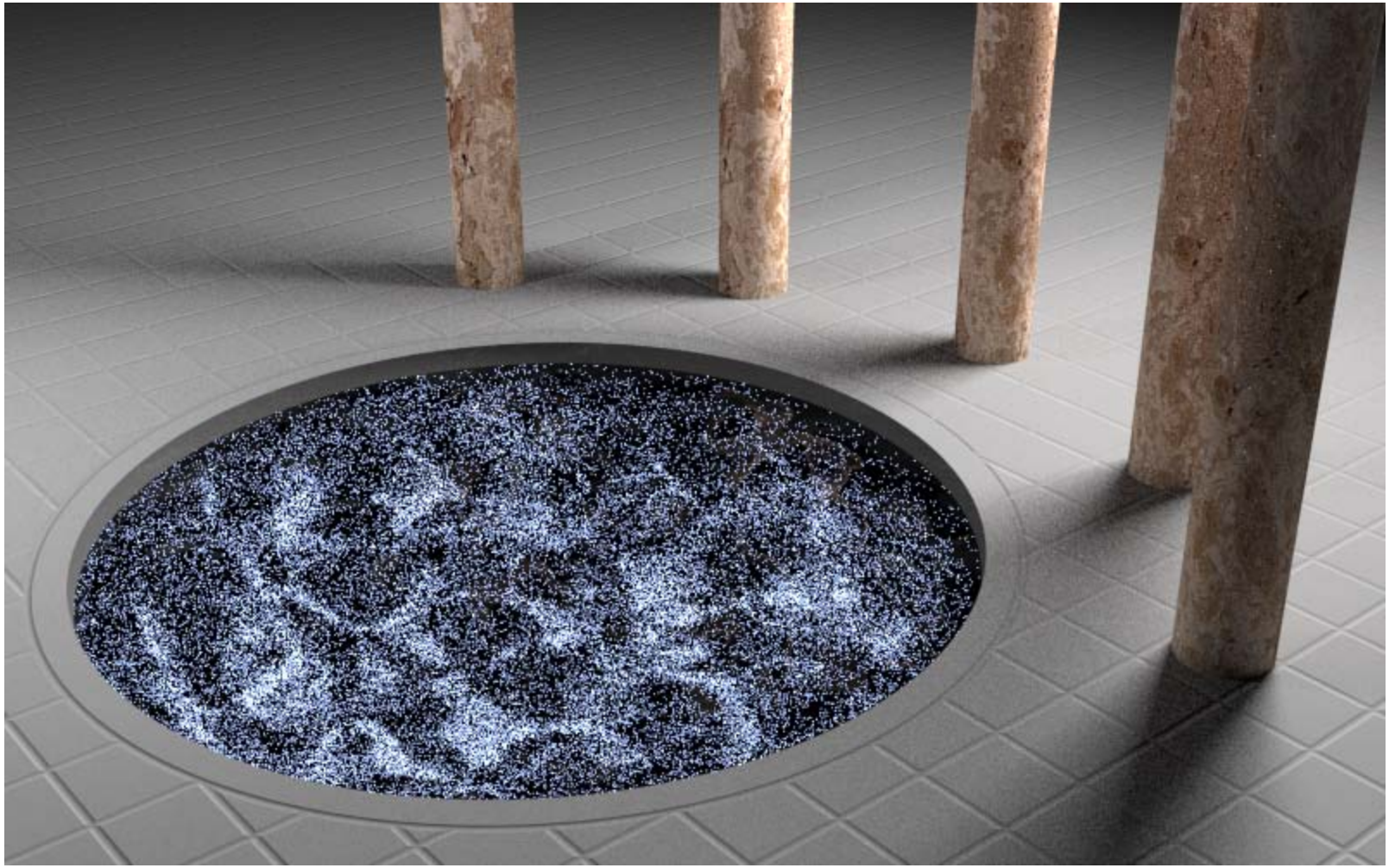
NPGR031

(a) Bidirectional path tracing with 40 samples per pixel.

Image credit: Eric Veach

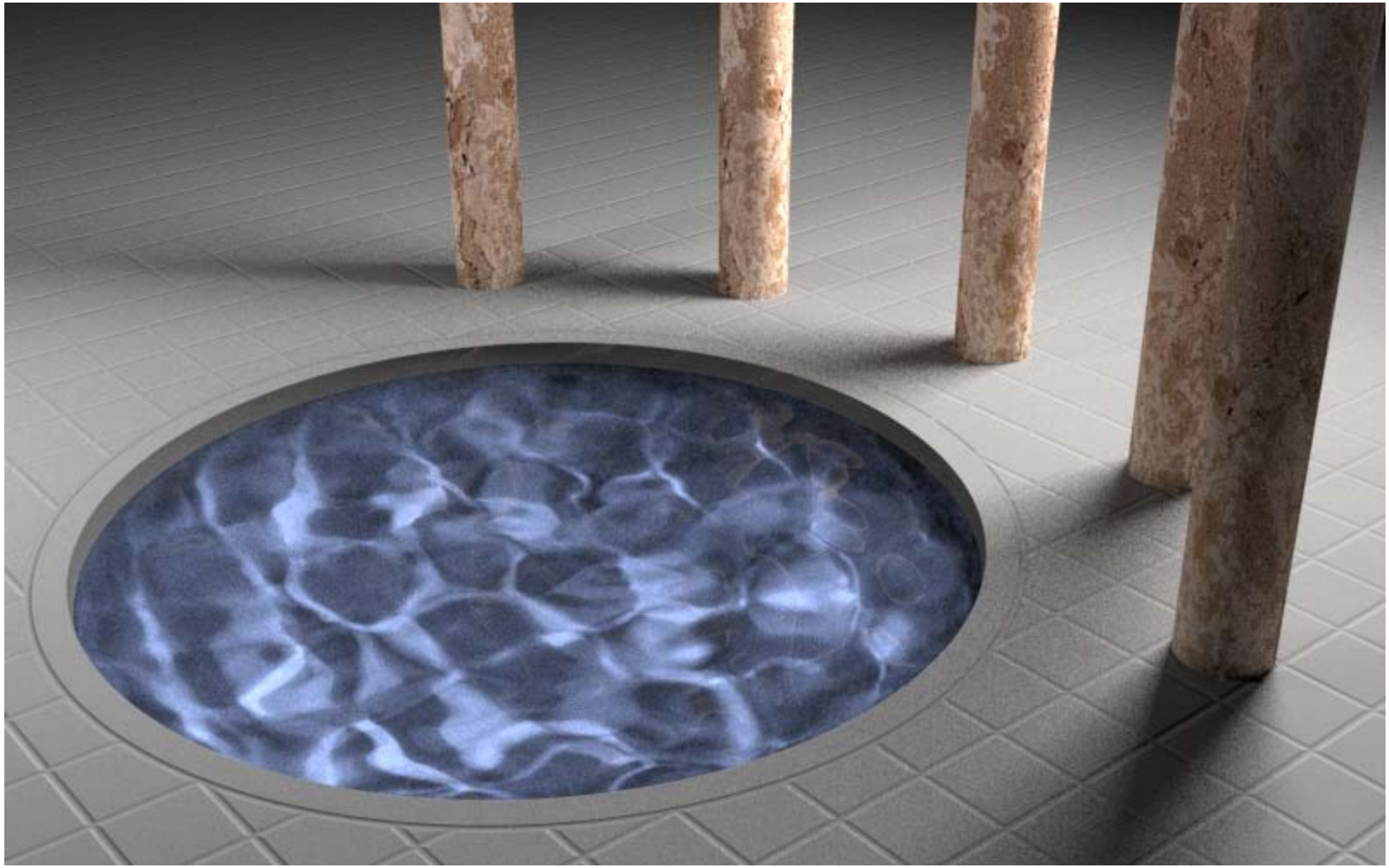
(b) Metropolis light transport with an average of 250 mutations per pixel [the same computation time as (a)].

Image credit: Eric Veach



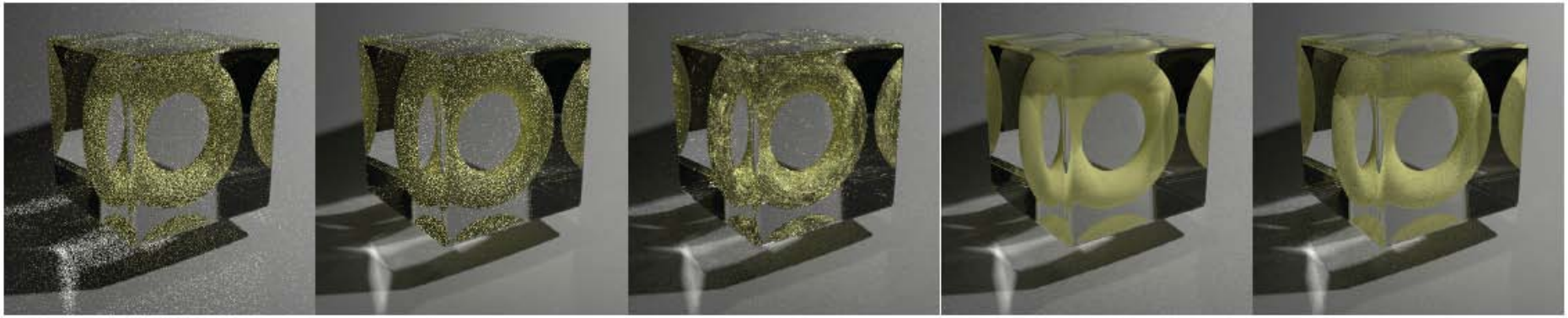
(a) Path tracing with 210 samples per pixel.

Image credit: Eric Veach



(b) Metropolis light transport with an average of 100 mutations per pixel [the same computation time as (a)].

Image credit: Eric Veach



PT BDPT MLT PPM Reference

Figure 7: *Torus embedded in a glass cube. The reference image on the far right have been rendered using path tracing with 51500 samples per pixel. The Monte Carlo ray tracing methods fail to capture the lighting within the glass cube, while progressive photon mapping provides a smooth result using the same rendering time.*

Image credit: Toshiya Hachisuka

Figure 8: *Lighting simulation in a bathroom. The scene is illuminated by a small lighting fixture consisting of a light source embedded in glass. The illumination in the mirror cannot be resolved using Monte Carlo ray tracing. Photon mapping with 20 million photons results in a noisy and blurry image, while progressive photon mapping is able to resolve the details in the mirror and in the illumination without noise.*

Image credit: Toshiya Hachisuka