Interactive Raytraced Caustics

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Abstract

In computer graphics, bright patterns of light focused onto matte surfaces are called "caustics". We present a method for rendering dynamic scenes with moving caustics at interactive rates. This technique requires some simplifying assumptions about caustic behavior allowing us to consider it a local spatial property which we sample in a pre-processing stage. Storing the caustic locally limits caustic rendering to a simple lookup. We examine a number of ways to represent this data, allowing us to trade between accuracy, storage, run time, and precomputation time.