

## Supplementary materials: Efficient Participating Media Rendering with Differentiable Regularization

In this supplementary material, we show the source images and the denoised gradient images of the three scenes (Lucy scene, Bunny scene and Candle scene) used in the main contents.

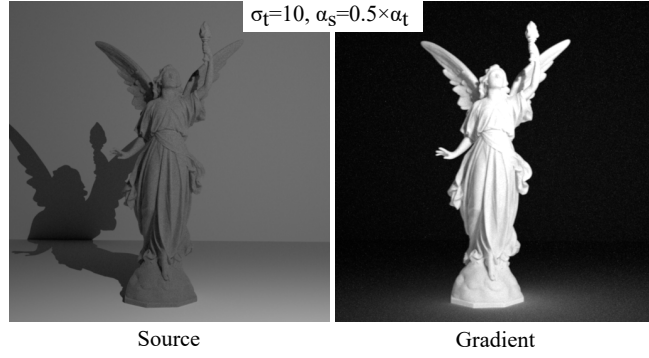


Fig. 1 The source image (left) and the denoised gradient image (right) used in the prediction, whose extinction coefficient ( $\sigma_t$ ) is 10 and albedo is  $0.93 \times \alpha_t$ . The target albedo ( $\alpha_t$ ) is 0.97, and the sample rate is 512.

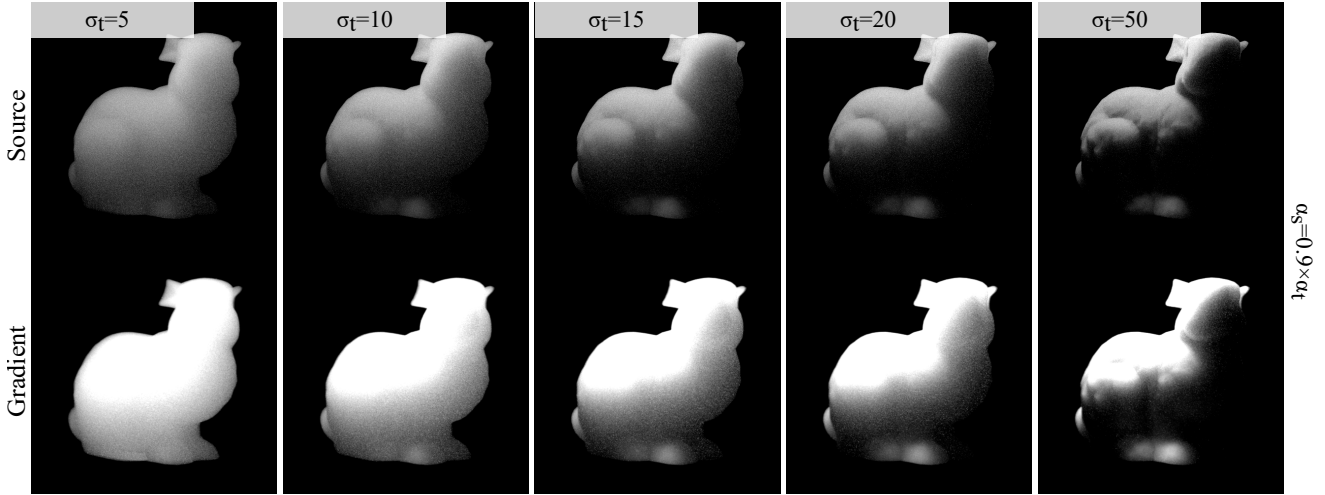


Fig. 2 The source images (top) and the denoised gradient images (bottom) with different extinction coefficients ( $\sigma_t \in \{5, 10, 15, 20, 50\}$ ) are used in the prediction. The albedo is  $0.95 \times \alpha_t$ , where the target albedo ( $\alpha_t$ ) is 0.95. The sample rate is 256.

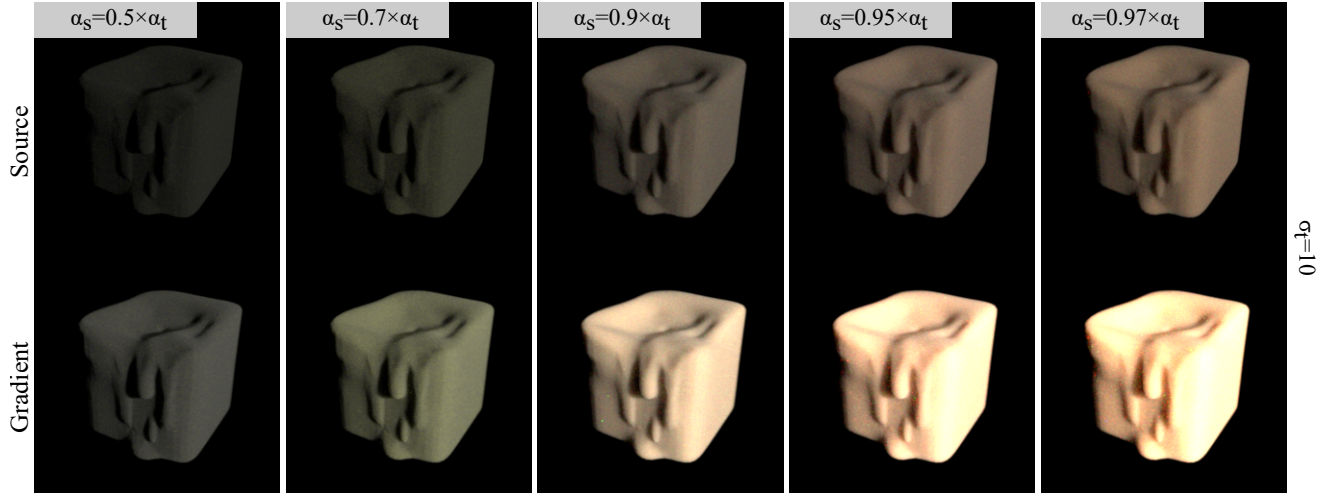


Fig. 3 The source images (top) and the denoised gradient images (bottom) with different source albedo are used in the prediction. The target albedo is  $[0.98, 0.94, 0.88]$ , and the range of factor is  $\{0.5, 0.7, 0.9, 0.95, 0.97\}$ . The extinction coefficient is 10, and the sample rate is 2048.