Practical Multiple Scattering for Rough Surfaces

Supplemental Material

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1 RENDERING OUR MODEL WITH HIGH ROUGHNESS

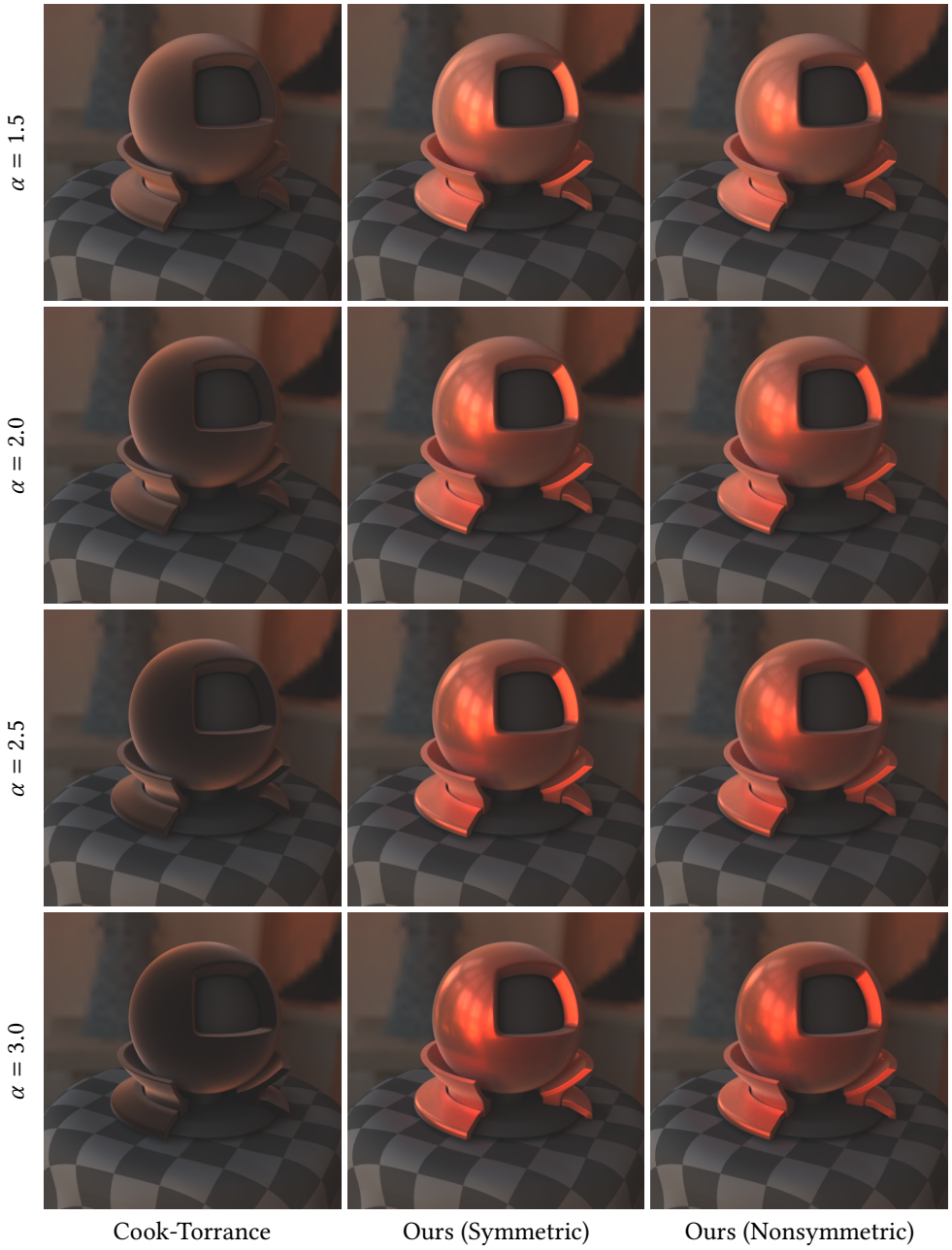

Fig. 1. Rendering results of our symmetric and nonsymmetirc models and the Cook-Torrance model with high roughness of a copper geometry.

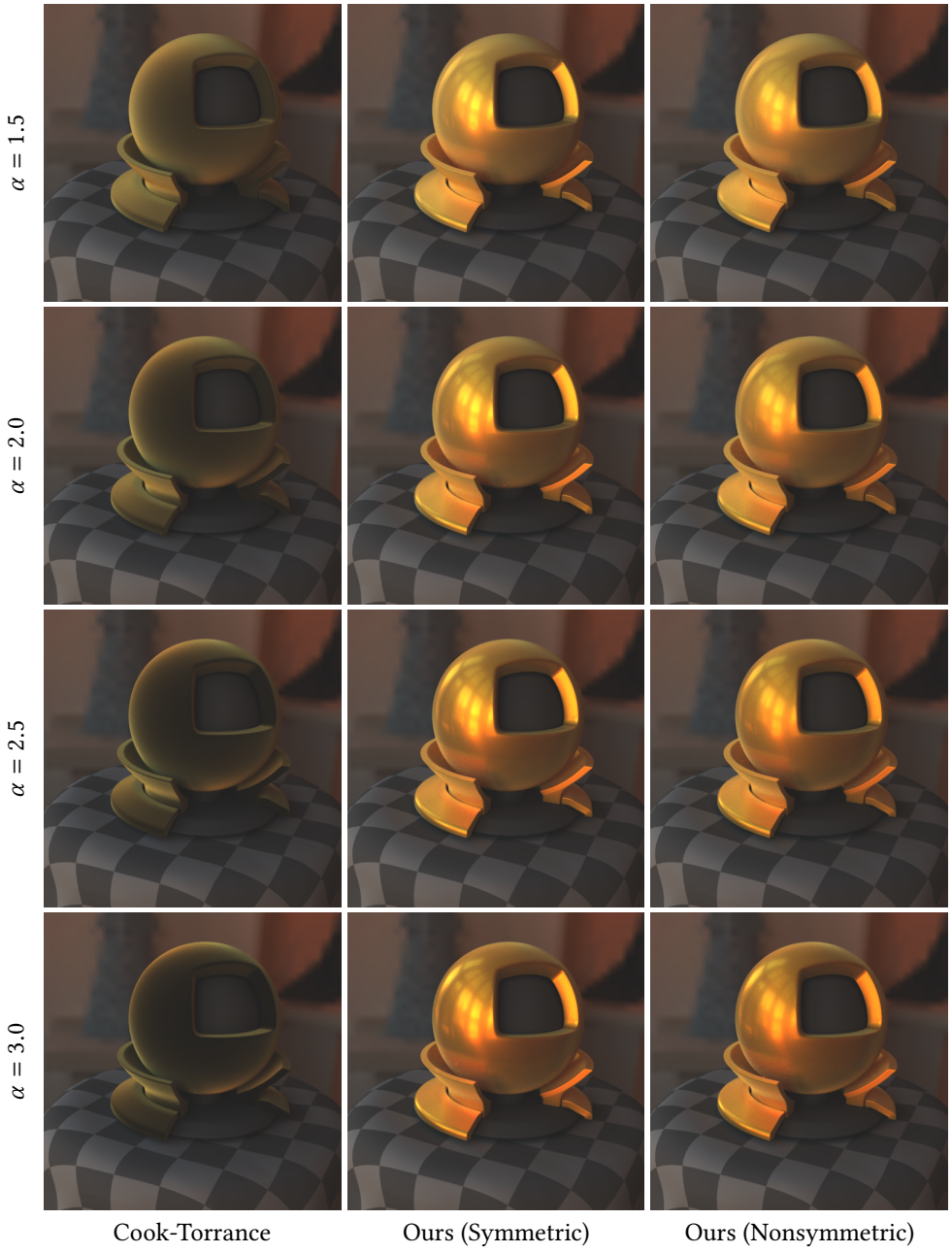

Fig. 2. Rendering results of our symmetric and nonsymmetirc models and the Cook-Torrance model with high roughness of a gold geometry.

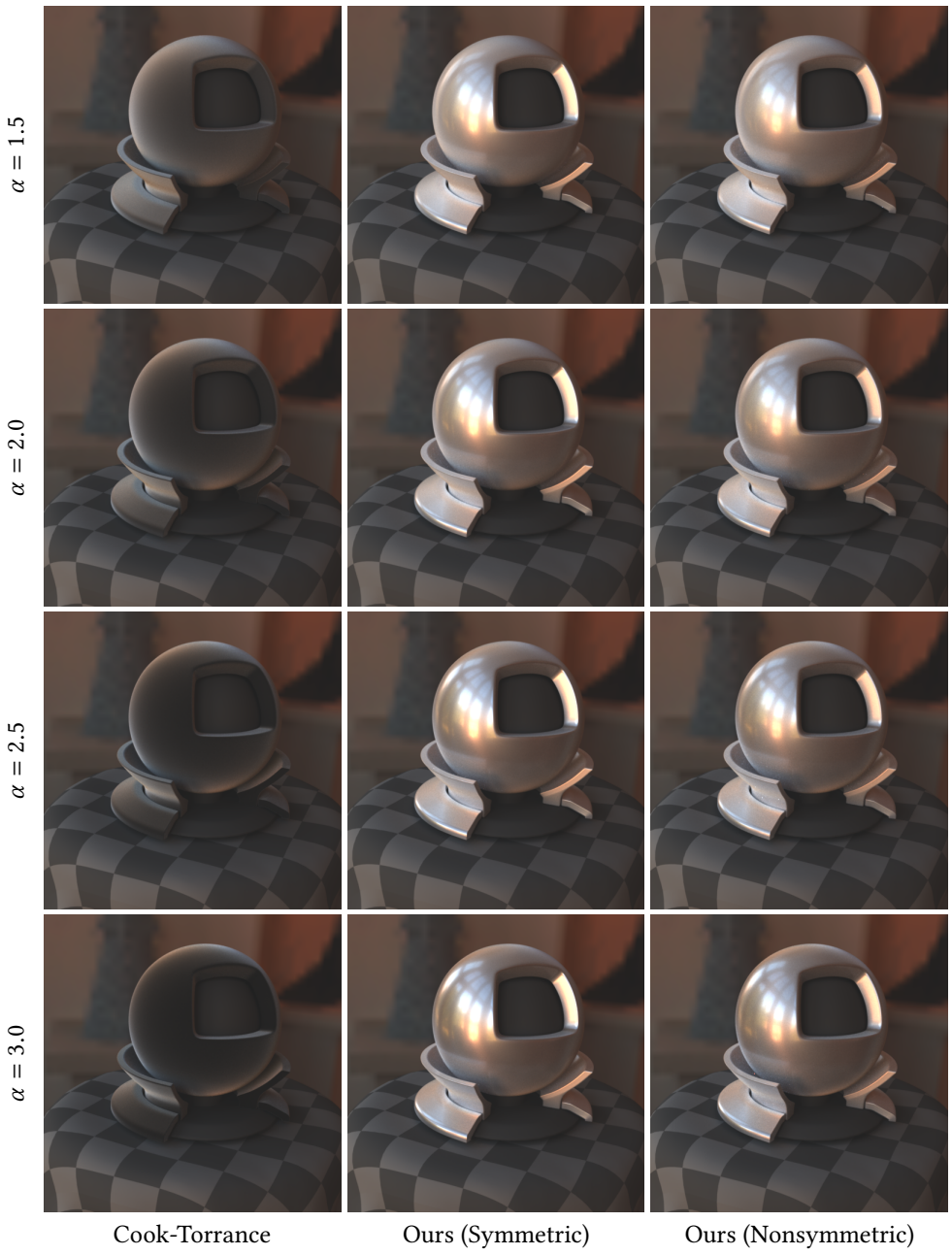

Fig. 3. Rendering results of our symmetric and nonsymmetirc models and the Cook-Torrance model with high roughness of a aluminum geometry.

2 2D VALIDATION FOR OUR MODEL

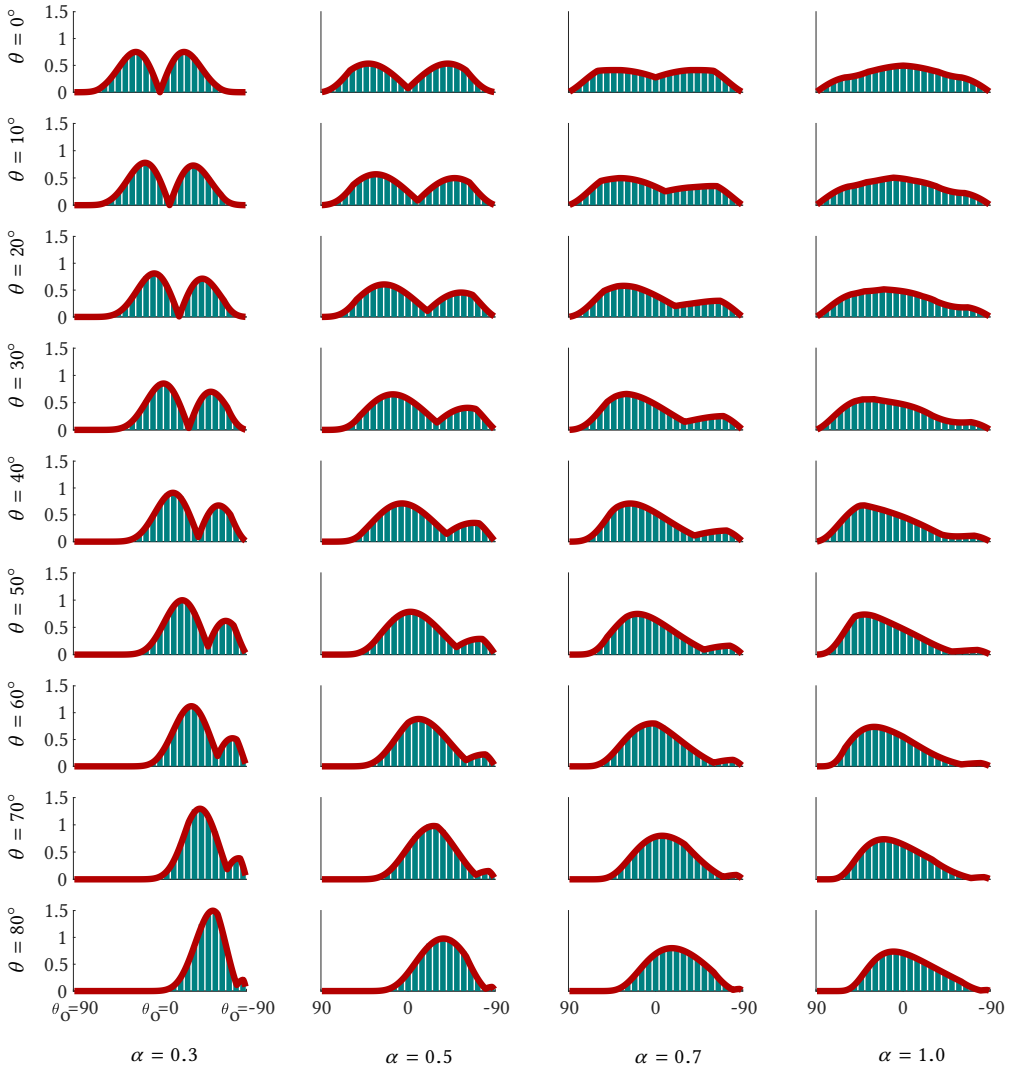

Fig. 4. 2D Validation for our symmetric model with Beckmann distribution.

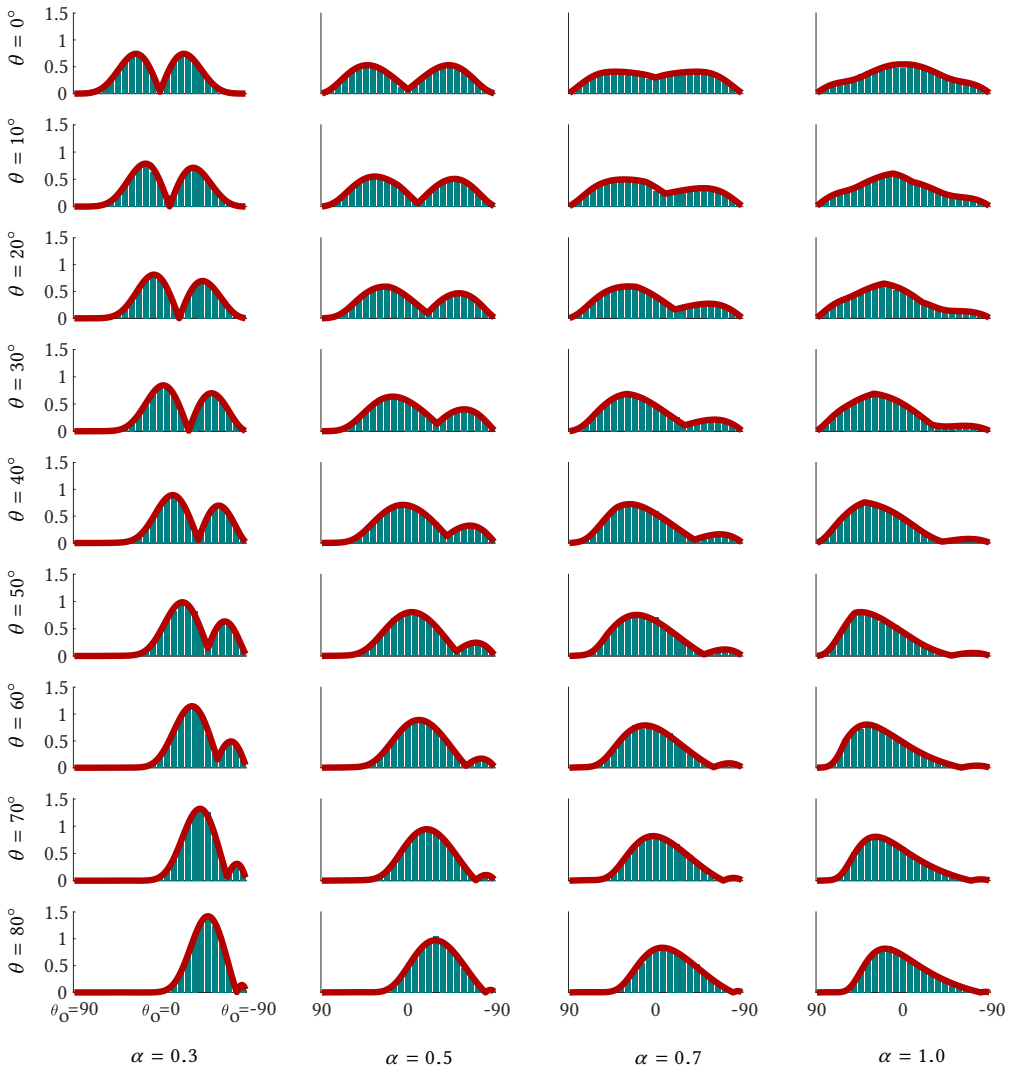

Fig. 5. 2D Validation for our nonsymmetric model with Beckmann distribution.

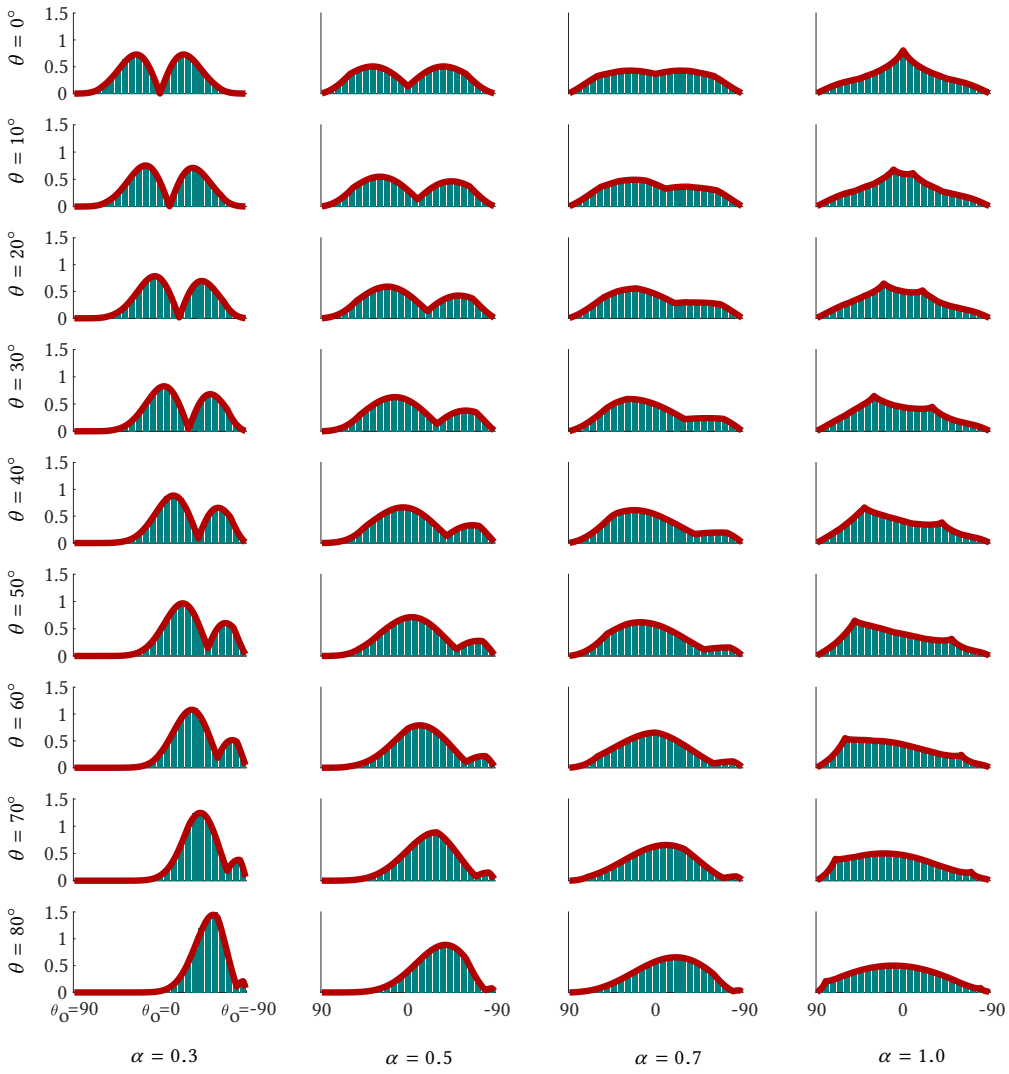

Fig. 6. 2D Validation for our symmetric model with Phong distribution.

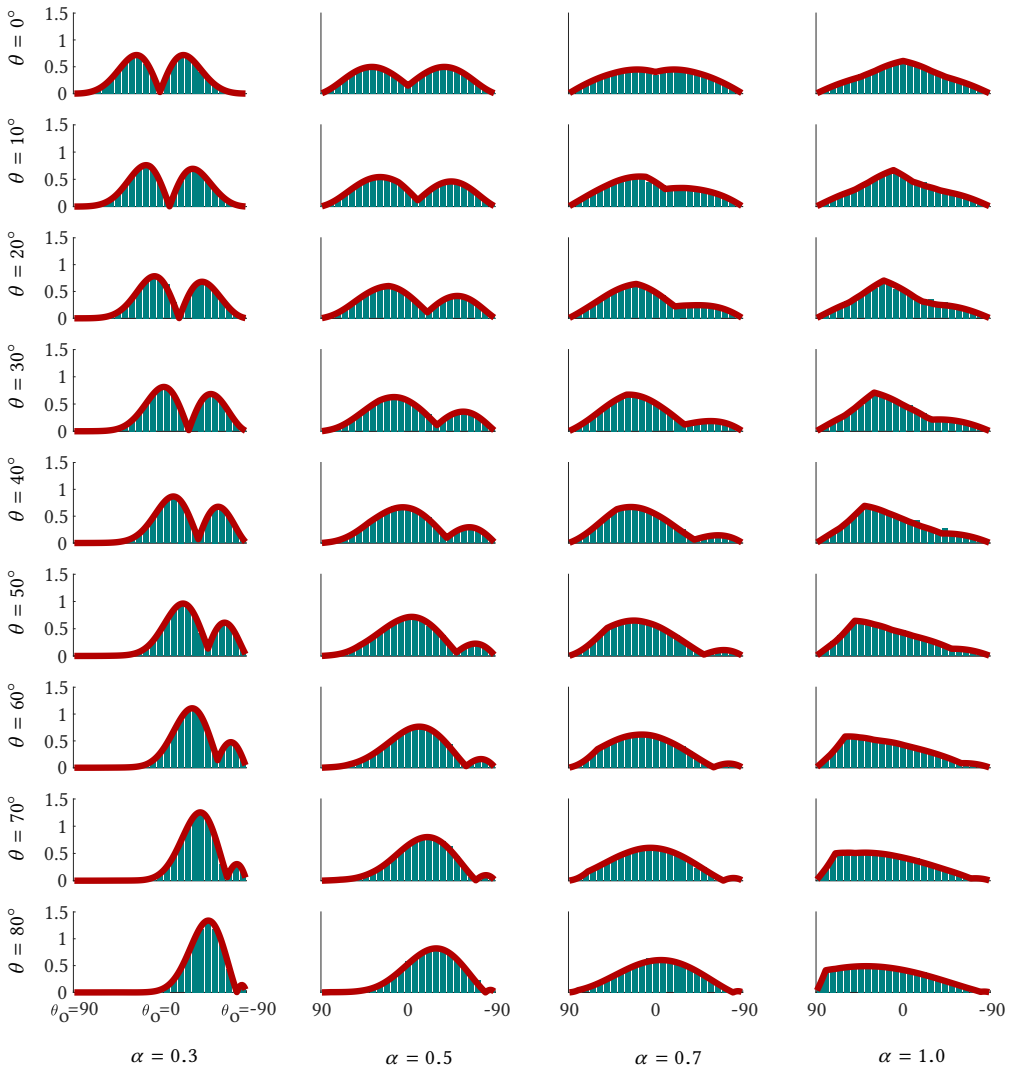

Fig. 7. 2D Validation for our nonsymmetric model with Phong distribution.

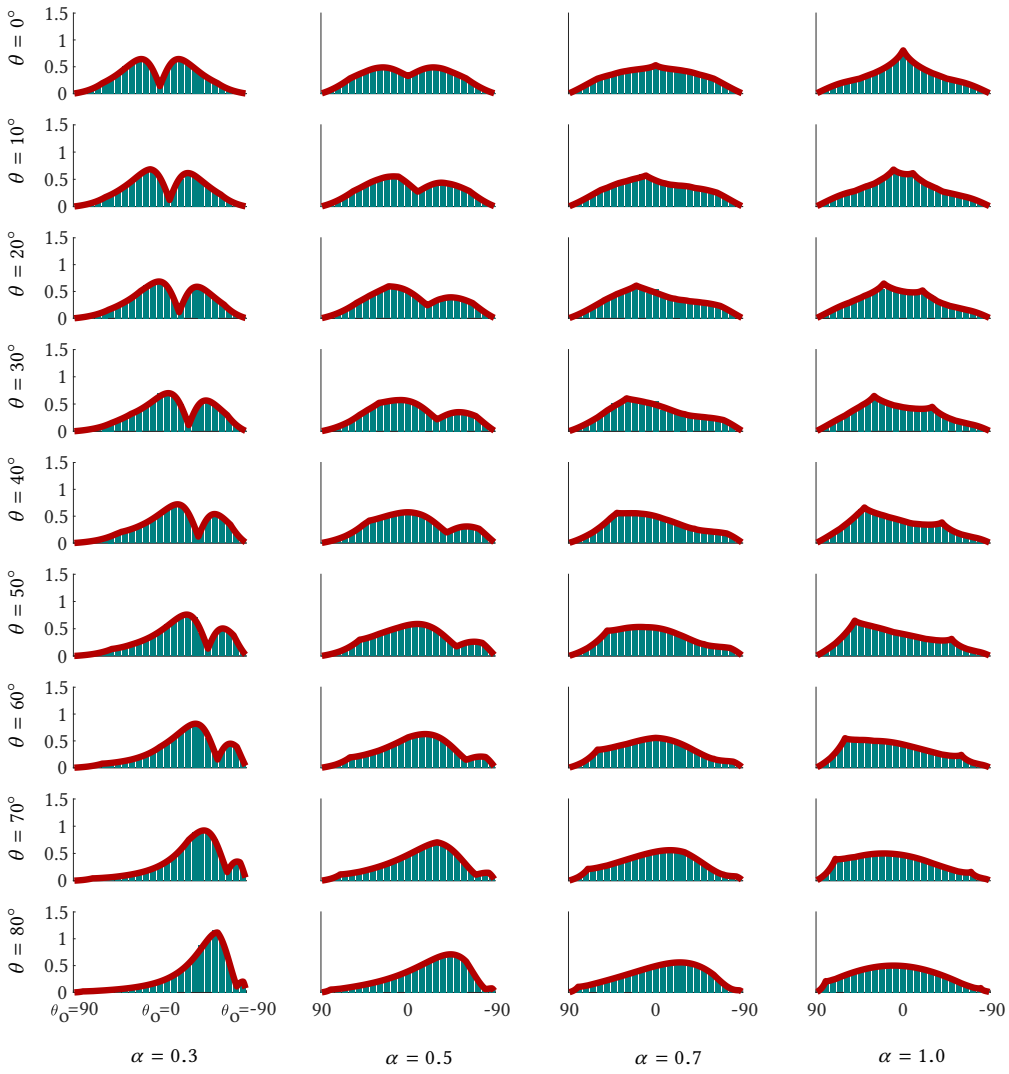

Fig. 8. 2D Validation for our symmetric model with GGX distribution.

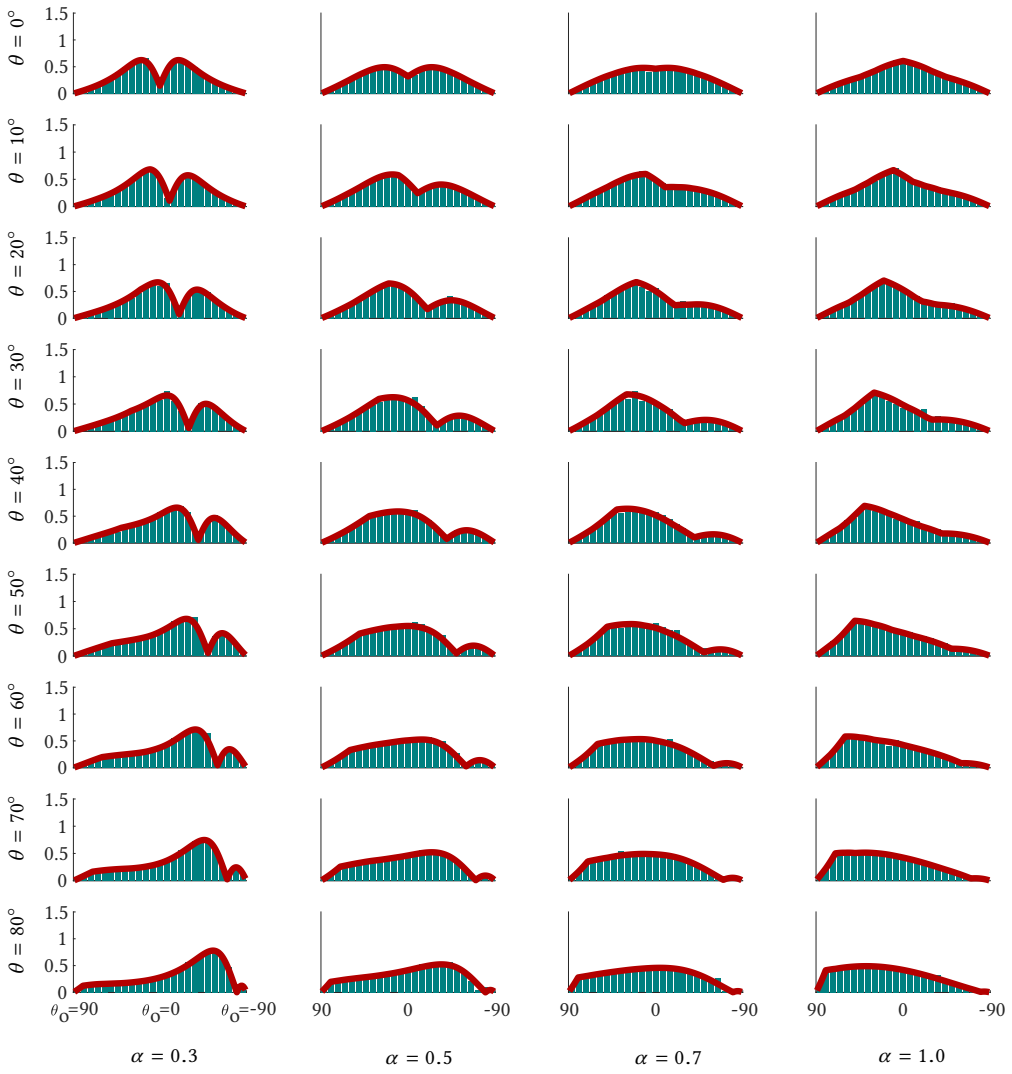

Fig. 9. 2D Validation for our nonsymmetric model with GGX distribution.

3 GEOMETRIC CONFIGURATIONS FOR NONSYMMETRIC V-GROOVES

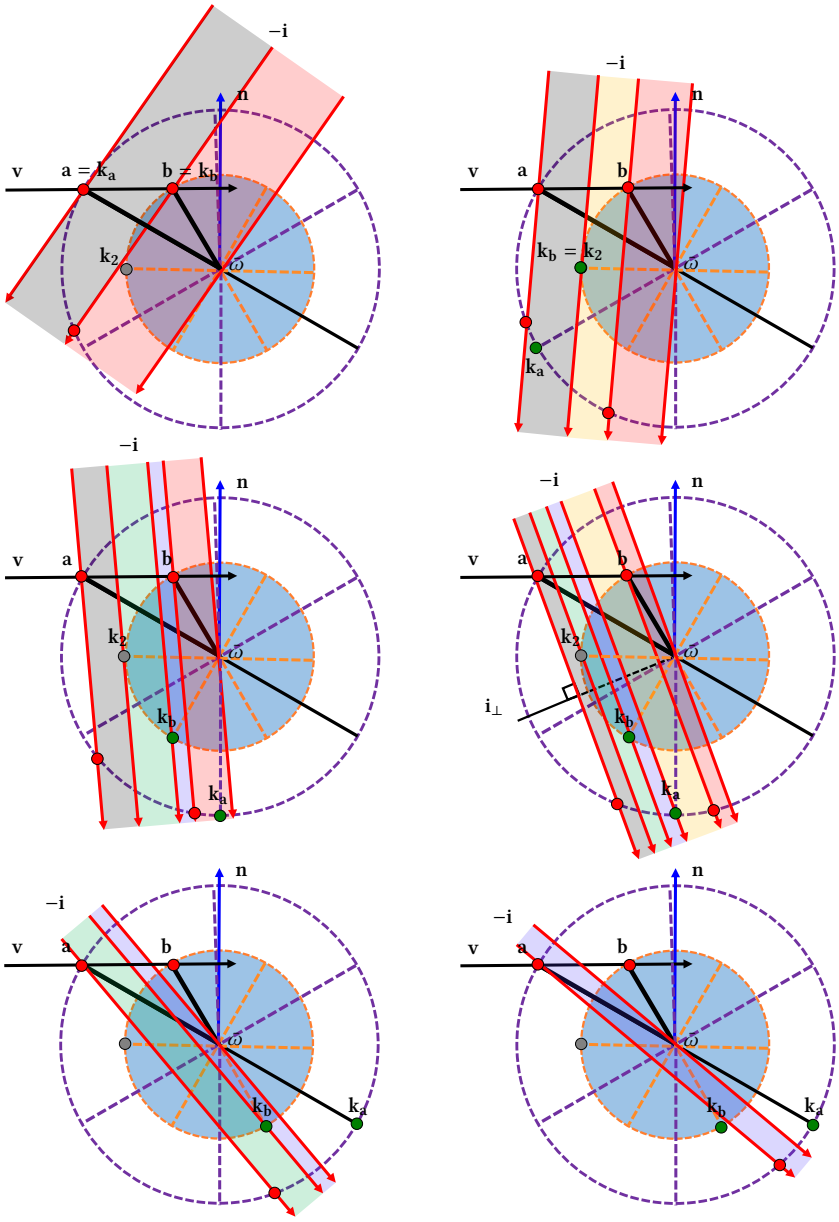

Fig. 10. Geometric configurations for other incoming directions (a left surface). Masking (red region), 1st bounce (black region), $(k_b - 1)$-th bounce (green region), k_b-th bounce (purple region), and $(k_b + 1)$-th bounce (yellow region).

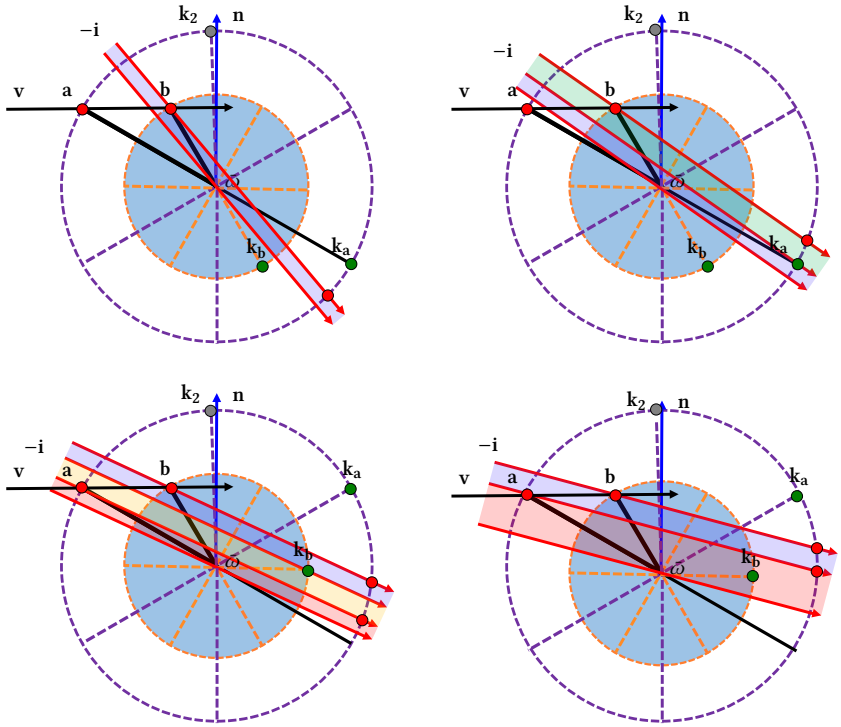

Fig. 11. Geometric configurations for other incoming directions (a right surface). Masking (red region), 1st bounce (black region), $(k_a - 1)$-th bounce (green region), k_a-th bounce (purple region), and $(k_a + 1)$-th bounce (yellow region).