Dual Scattering for Real-Time Multiple Scattering in Hair

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Multiple scattering of light in the hair volume is an important phenomenon that determines visible hair color. Without this multiple scattering component, even blonde hair looks dark and unnatural, and faking this component gives the hair a dull appearance. Dual scattering is a novel method that approximates multiple scattering in hair based on several physically based theoretical simplifications. The result of dual scattering is a real-time estimation of the correct hair appearance under any lighting and viewing condition, which is visually identical to the result of an accurate computation using path tracing that takes many hours.

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