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Ray optics for absorbing particles with application to ice crystals at near-infrared wavelengths

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Highlights

- We derived a ray-optics solution that takes into account the inhomogeneous waves for absorbing particles large compared to the wavelength of light.
- We validated the solution through comparisons against an exact method, the discrete exterior calculus.
- We computed scattering for ice crystals through the NIR spectrum, and found a systematic increase in the single-scattering albedo when inhomogeneous waves were considered.

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