

Accepted Manuscript

Title: Exact Form of the Physical Optics Integral

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PII: S0030-4026(16)31414-0

DOI: <http://dx.doi.org/doi:10.1016/j.ijleo.2016.11.088>

Reference: IJLEO 58503



To appear in:

Received date: 24-9-2016

Accepted date: 13-11-2016

Please cite this article as: Yusuf Ziya Umul, Exact Form of the Physical Optics Integral, Optik - International Journal for Light and Electron Optics <http://dx.doi.org/10.1016/j.ijleo.2016.11.088>

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# Exact Form of the Physical Optics Integral

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**Abstract:** The exact structure of the physical optics integral is obtained. With this aim, the rigorous solution of the diffraction problem of waves by a perfectly conducting half-plane is considered. The Fresnel integrals of the incident and reflected scattered fields are transformed into the physical optics integrals by defining a suitable variable transform. The relation of the obtained integral with the modified theory of physical optics is discussed.

**Key words:** electromagnetic diffraction; optical diffraction; physical optics.

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