Westfälische
Hochschule
Gelsenkirchen Bocholt Recklinghausen

Lecture ‘Computer Graphics’

Reflection, Refraction

We will not get rid of the integral.

Prof. Dr. Tom Vierjahn

Visual Computing (https://vc.w-hs.de)
Department of Business Studies and Information Technology
Campus Bocholt

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The Rendering Equation[1]

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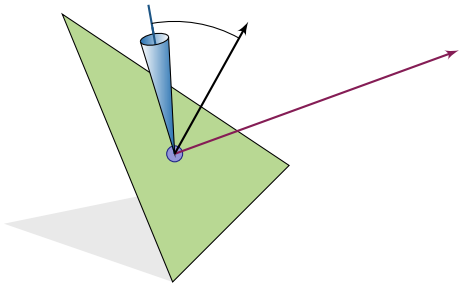
$$L(\mathbf{x}_2 \to \mathbf{x}_3) = g(\mathbf{x}_2 \to \mathbf{x}_3) \left(\epsilon(\mathbf{x}_2 \to \mathbf{x}_3) + \int_{\mathbf{x}_1} \rho(\mathbf{x}_1 \to \mathbf{x}_2 \to \mathbf{x}_3)\, L(\mathbf{x}_1 \to \mathbf{x}_2) \cos\theta_i \, \mathrm{d}\sigma_i \right)$$



[1] James T. Kajiya: The Rendering Equation. In SIGGRAPH Comput. Graph. 20(4). 1986.

Reflection Vector

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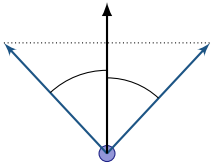

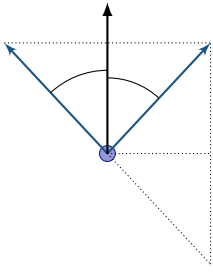

Refraction

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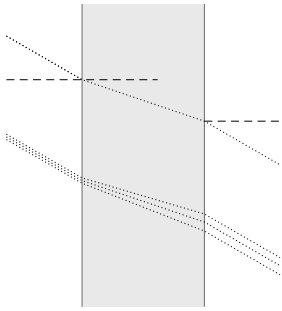
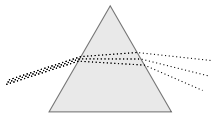
Snell's Law:

-
  η_1:
  η_2:
-

Dispersion:

-





Refraction

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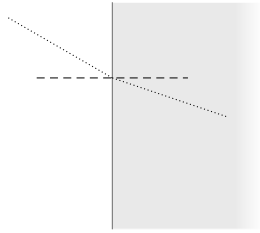
Direction of Refracted Ray:



Summary

Westfälische Hochschule

- Reflection Vector
- Snell's Law
- Direction of Refracted Ray

Prof. Dr. Tom Vierjahn
- tom.vierjahn@w-hs.de

Visual Computing
- https://vc.w-hs.de
- VisualComputingWH
- Visual Computing WH
- @VisualComputingWH@vis.social

Westphalian University of Applied Sciences
Department of Business Studies and Information Technology
Campus Bocholt