

Exercise 5.2.1 Fresnel Coefficients

Consider an unpolarized light beam hitting the surface of an isotropic glass with $n = 1,5$ at right angles ($\alpha = 0^\circ$).
Hint: to avoid $0/0$ situations consider small α and β with $\cos\alpha, \beta = 1$.

- Derive the simplified Fresnel equations [as given in the script](#) for $\alpha = 0^\circ$
- How much of the light will be reflected?
- What is the phase relation between incoming, reflected and transmitted light?
- How does the beam leave the crystal (Intensity and polarization)
- Now consider these questions for some polarization of the incoming light.

Illustration



Link to the [solution](#)