

Tutorial for PHYS210 Lecture 5. Polarisation

- 1) Using the polarisation filters provided, look at reflections to find out in what direction the optical axis is oriented. Along the red or the blue dots?
- 2) (If I managed to get the glasses) Using the polarisation filters provided, investigate the sunglasses. In what direction is the optical axis of the sunglasses?
- 3) (If weather permits) Look at a piece of clear sky approximately 90° away from the sun through a polarising filter. Compare the sky for horizontal and vertical orientation of the optical axis. Which orientation gives a darker sky? In what direction is the light from the sky polarised?
- 4) Light reflects off a vertical window. In what direction will the light be polarised?
- 5) If you want to reduce these reflections with a polarising filter, in what direction should the optical axis be?
- 6) Someone with polarising sunglasses, will he/she see these reflections more or less clearly?
- 7) The glass has a refractive index of 1.6. At what angle with the normal will the reflection be fully polarized? What if the glass is under water ($n=1.33$)?