L2 Foundation of Physics 2B Optics 2019-20

O.5 Interferometry: Summary

Learning outcomes:

1. To discuss two-wave interference using the example of the **Michelson interferometer** [Optics $f2f$ Sec. 3.12].

Interferometry is the application of interference to measurement. One of the most important examples is the detection of gravitational waves in 2016.

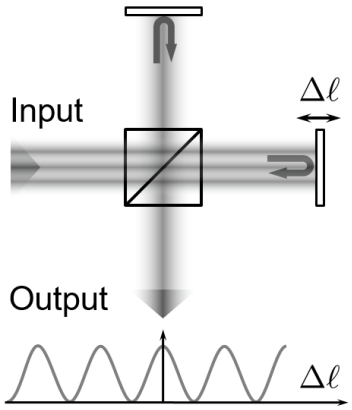

Figure 1: The Michelson interferometer with the output intensity as a function of the path difference shown below.

Worked example: Gravitation wave detection **2018 2B Exam Q. 5** [Optics $f2f$ Ex. 3.11]. See lecture notes and additional file on DUO.

Outlook: In the next lecture, we shall look at an application of two-wave interference using the example of the **Young's two-hole experiment** [Optics $f2f$ Sec. 3.6].