

Modern Optics: Homework 21

Due: 4 November 2015

1 Coherence function

An alternative definition of the coherence function, that yields easier calculations is

$$\Gamma(\tau) := \lim_{T \rightarrow \infty} \frac{1}{2T} \int_{-T}^T E(t)E^*(t + \tau)dt$$

Show that this yields the same result as obtained in class for a monochromatic wave.

2 Bennett, *Principles of Physical Optics*, 5.29, page 240.

3 Bennett, *Principles of Physical Optics*, 5.54, page 268.

4 Bennett, *Principles of Physical Optics*, 5.55, page 268.