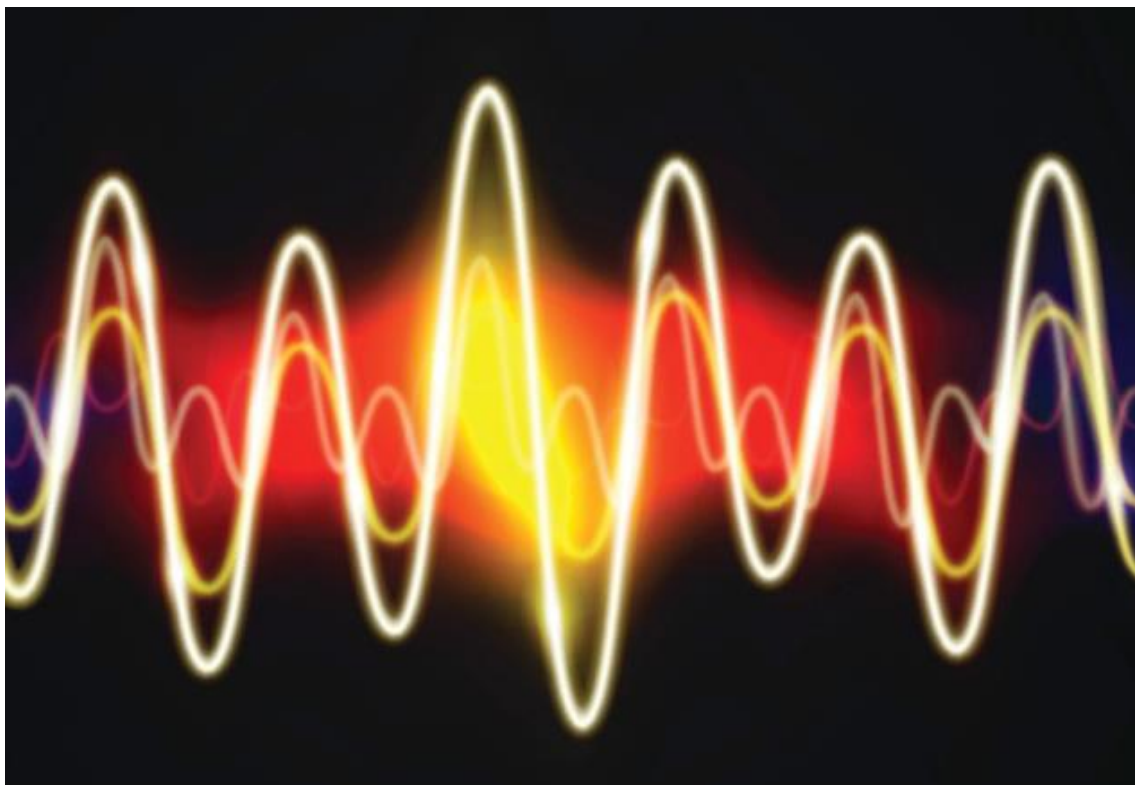


# Café Scientifique Headingley

Monday 10th February 2025  
Different Ways of Seeing Light

By: Almut Beige



The physics of light has an exciting history with experimental surprises and theoretical controversies that are still ongoing. Depending on the circumstances, we associate light with rays, with waves or even with particles. In other situations, we study the dynamics of electric and magnetic fields or consider photon states with scattering operators. This talk aims to illustrate some of the problems that arise when we try to derive the quantum physics of light from classical electrodynamics. We review different approaches to the quantised electromagnetic field and discuss their different physical predictions. Overall, the history of light is an interesting example how physics progresses in its search for an underlying theory that describes everything.

*Almut Beige has been fascinated by the foundations of quantum physics, and their often very strange implications and applications, since working on her PhD in Goettingen. In 2000, she proposed to use them to design more efficient measurement-based quantum computing schemes. More recently, Almut became interested in quantum photonics and now tries to better understand light. Her research is motivated, for example, by its potential applications in quantum sensing. Her work has been cited in several patents and she is also a co-founder of the Leeds-based quantum sensing start-up company NIQS Tech.*

**Venue:** The New Headingley Club, 56 St Michaels Road, LS6 3BG  
**Time:** Room opens 7:30pm, Talk begins promptly at 7:45pm  
**Entry:** Donation please for room hire and expenses: £4 at the door



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