

KSOP-QMat Summer School 2020

Is there such a thing as classically entangled light?

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Entanglement is a quintessential property of quantum systems, and captures the fact that the state may be written in a manner that is non-separable, so that a measurement on one part affects the outcome of the other. But non-separability is not unique to quantum mechanics: weather maps are non-separable, and more pertinently, so are certain forms of structured classical light, controversially referred to as “classically entangled”. In the master class we will discuss the following questions:

- What is quantum and what is classical?
- In what sense can classical light be entangled?
- What quantum protocols could be executed with classically entangled light?

Suggested reading:

Contemporary Physics 60, 1 (2019)

Adv. Opt. Photon. 11, 67 (2019)

Progress in Optics 64, 99 (2019)