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Structured light from lasers

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Structured light refers to the ability to tailor light in amplitude, phase and polarisation, creating complex light fields in 2D and beyond. While it is traditional to do so external to the laser, real-world applications demand at-the-source control. In this talk I will outline the recent progress in structured light lasers, including the production of scalar and vector states of light from lasers, the use of topological photonics in lasers, and dynamic and geometric phase control. A particular example of structured light is that carrying orbital angular momentum, twisted light with helical phase, directly from a laser. The talk will highlight the state-of-the-art as well as the open challenges that remain.