

# **Optical vortex induction via lightmatter interaction in liquid-crystal media**

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Optical vortices are attracting much attention because of their applications in various fields of optical processing, communications, enhanced imaging systems, and bio-inspired devices. Different methods to generate optical vortices have been devised to date. In this talk we will discuss the main mechanisms of vortex generation in liquid crystals, in particular on vortex generation induced by umbilics. Optical vortex induction in a photosensitive light valve is presented as a self-stabilizing mechanism leading to reconfigurable and programmable vortex arrays.