SPATIOTEMPORAL VORTICES OF LIGHT

Qiwen ZHAN * [1, 2]

[1]*School of Optical-Electrical and Computer Engineering,*
University of Shanghai for Science and Technology, 516 Jungong Road, Shanghai,200093, China;
[2]*Zhangjiang Laboratory, 100 Haike Road, Shanghai, 201204, China*
**qwzhan@usst.edu.cn*

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Spatiotemporal vortices of light featuring transverse orbital angular momentum and energy circulation in the spatiotemporal domain have received increasing attention recently [1-6]. Controllable experimental generation of these vortices has triggered rapidly increasing interests in this field. This talk will provide an overview of the latest developments of spatiotemporal vortices of light ranging from theoretical foundations, experimental generation schemes, characterization methods, to potential applications. These spatiotemporal vortices and the exotic topology constructed with them may pave the way to the discovery of novel physical mechanisms and new applications with broad aspects.

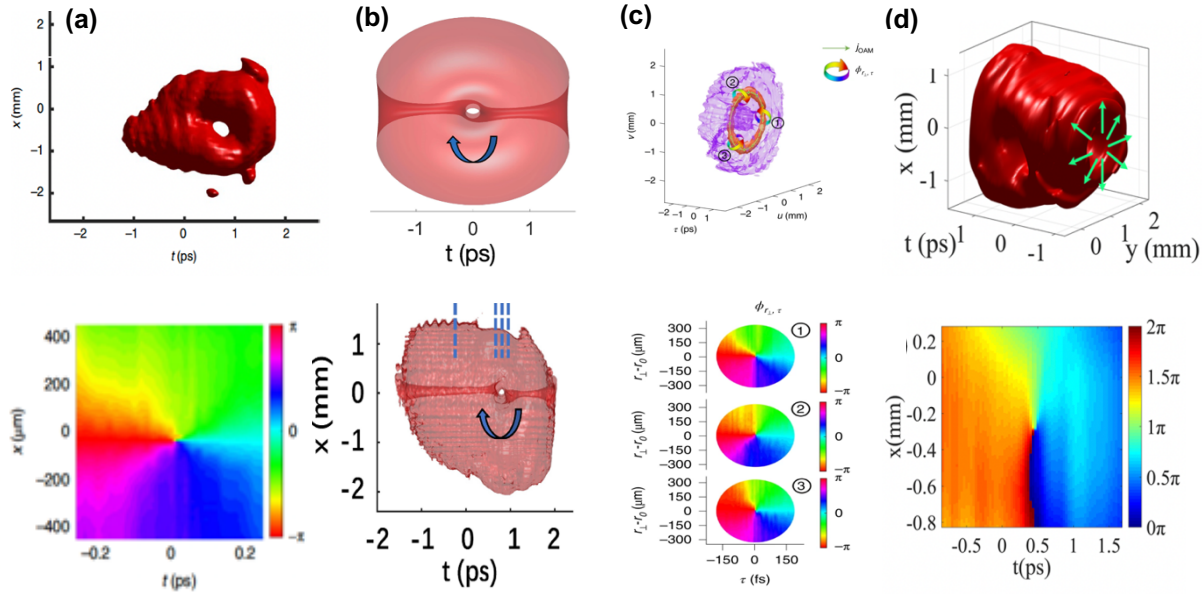

Figure 1: Various examples of spatiotemporal vortices of light. (a) Spatiotemporal optical vortex (STOV) [1]; (b) STOV with spatial optical vortex [3]; (c) Optical toroidal vortex [4]; (d) Radially polarized STOV [5].

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