



## About the cover: *Advanced Photonics* Volume 5, Issue 1

The polarization structure of complex propagating beams can be designed to exhibit controlled configurations that can be described via hopfion quasiparticles. This family of polarization textures can be outlined from basic topological theories and realized experimentally. The topological hopfion numbers can be additionally tuned revealing higher order hopfions. The hopfion can be further transported by tuning phases of the constituting beams that form a hopfion.

The image on the cover for *Advanced Photonics* Volume 5 Issue 1 illustrates a torus-knot configuration of a toroidal layer

in the Hopf fibration and its vectorial properties of a photonic hopfion, which is controllably transported in free space. The image is based on original research presented in the article by Yijie Shen, Bingshi Yu, Haijun Wu, Chunyu Li, Zhihan Zhu, and Anatoly V. Zayats, "Topological transformation and free-space transport of photonic hopfions," *Adv. Photonics* **5**(1), 015001 (2023), doi: [10.1117/1.AP.5.1.015001](https://doi.org/10.1117/1.AP.5.1.015001).