

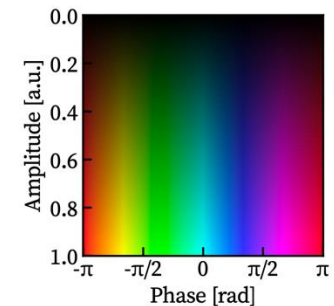
Master's Thesis: Characterization of Space-Division Multiplexing Devices Using Digital Holography

As communication technologies advance, the demand for higher data transmission rates grows, driving the need for innovative multiplexing techniques. Space-division multiplexing (SDM) has emerged as a promising solution, but its implementation requires precise characterization of the corresponding optical fibers and devices.

Digital holography provides a powerful approach to visualize and analyze the complex spatial and modal interactions within these fibers and devices. By enabling the non-invasive, high-resolution measurement of the full optical field of SDM devices, digital holography supports the development and optimization of future high-capacity transmission systems.

Your tasks would comprise:

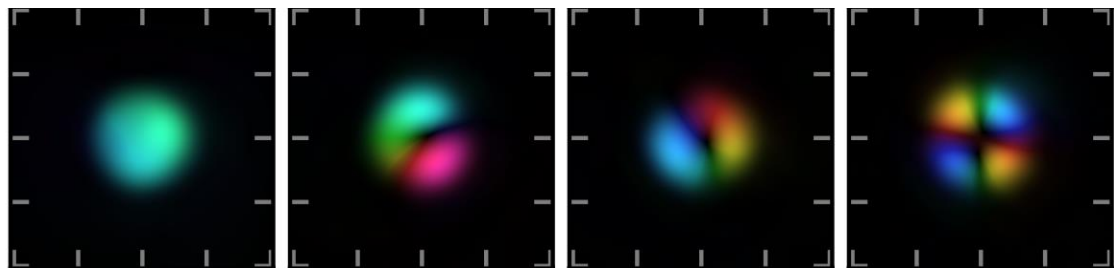
- Conducting a literature review on different approaches to digital holography
- Designing & optimizing a digital holography setup
- Experimentally characterizing SDM components



Interested? Then contact

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Complex amplitude distributions of few-mode fiber obtained using digital holography.
Figure taken from van der Heide, S. P. (2022). *Space-division Multiplexed Optical Transmission enabled by Advanced Digital Signal Processing*.