8th bwHPC Symposium



Contribution ID: 136

Type: not specified

Singular modes of turbulence —Exploring new possibilities for free-space quantum communication

Monday, November 28, 2022 2:30 PM (15 minutes)

Free-space quantum communication is an active, application-oriented research area responding to the evergrowing demand of secure and flexible communication channels. Although recently developed high-dimensional encoding of information into photonic orbital angular momentum may provide broadband links, its successful implementation proved to be challenging in the presence of atmospheric turbulence. To this end, we strive to develop a new paradigm of high-dimensional encoding –into spatial singular modes of light in turbulence. By exploiting the intrinsic features of the atmosphere, such instantaneous modes are inherently robust to turbulence. In this talk, we will provide an overview of the concept and how numerical calculations on the bwHPC cluster simulate the transmission of light through turbulence.

Presenter: BACHMANN, D.

Session Classification: Session III