

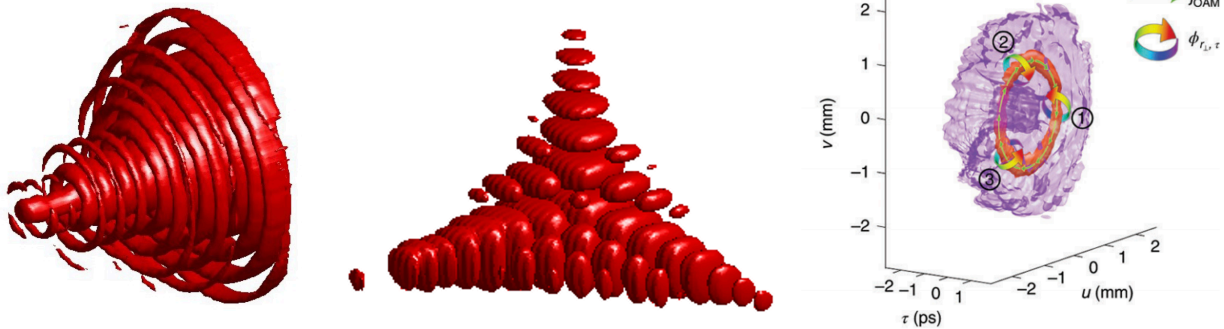
Three-dimensionally structured optical wavepackets

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Abstract

The propagation of optical waves is traditionally analyzed as distinct processes involving beam (spatial) and pulse (temporal) propagation. However, the behavior of three-dimensional (3D) spatiotemporal wave packets, which feature unique combinations of spatial and temporal wave characteristics, reveals remarkable phenomena. This seminar will explore recent advancements and future directions in the study of these extraordinary 3D optical wave packets. Key topics include unique optical waveforms such as Airy, Bessel, spatiotemporal optical vortices, toroidal vortices, etc. highlighting their significance in the field.



Speaker Bio



Dr. Andy Chong is an Associate Professor in the Department of Physics at Pusan National University. He earned dual B.S. degrees in Physics and Mechanical Engineering from the University of Texas at Austin in 1996. After gaining industry experience with companies such as Corning Inc. and Samsung, he returned to academia to pursue graduate studies. Dr. Chong received his M.S. and Ph.D. in Applied Physics from Cornell University in 2008, focusing on fiber lasers and amplifiers. He began his academic career in the Department of Physics at the University of Dayton in 2011 before joining Pusan National University in 2022. His research interests include ultrafast optics, particularly fiber lasers and amplifiers, as well as novel three-dimensional optical wave packets.