Quantum Optics with Narrow-Band Bi-Photons Generated from Cold Atom Ensemble

Speaker: Yuan Sun, National University of Defense Technology
Time: 2:00-3:00pm, Monday, April 22, 2019
Venue: Room 264, Geography Building, Zhongbei Campus, ECNU
Host: Guoxiang Huang, East China Normal University

Abstract:
Narrow-band bi-photon generation from high optical depth cold atom ensemble via DLCZ(Duan-Lukin-Cirac-Zoller) procedure has become a vital topic in the research frontier of quantum optics with cold atoms. It provides a testbed for a lot of new physics, involving not only the four-wave-mixing process, but also the EIT(electromagnetically induced transparency) process. In this talk, I will report some of my previous experimental work on this topic, such as single-photon waveform modulation and multi-photon interferences. Moreover, I will also discuss my own thoughts on its potential development for the future.

Biography:
Dr. Yuan Sun is senior research scientist at Interdisciplinary Center for Quantum Information, National University of Defense Technology. He obtained his Bachelor’s Degree from University of Science and Technology of China in 2007, and obtained his Ph.D. Degree from State University of New York at Stony Brook in 2013, under the supervision of Professor Harold Metcalf. He was visiting scholar at the Hong Kong University of Science and Technology during 2013-2014, and was post-doc researcher at the University of Wisconsin-Madison during 2015-2017. Dr. Sun’s current research interest focuses on the areas of quantum metrology, quantum computing and quantum sensing with cold atoms. Recent research publications include nearly 20 articles on Phys. Rev. A, Optica and Phys. Rev. Lett.