



IBS Center for Molecular Spectroscopy and Dynamics

Lectureship

- **SPEAKER**

Prof. Tai Hyun Yoon (IBS CMSD, Korea University)

- **TITLE**

Complementarity relation (Wave-Particle Duality) in Classical and Quantum Interferometers

- **ABSTRACT**

In this lecture, I will give a brief introduction to two-state description of classical and quantum interferometers. Naturally, the vector nature of the electric field plays a major role to understand the complementarity relation observed in classical and quantum two-state interferometers with two independent degrees of freedom among the spin (polarization), spatial, and temporal modes. I aim to introduce a recent complementarity relation discovered by J. H. Eberly in 2018: $V^2 + D^2 + C^2 = 1$ (X. -F. Qian et al., *Optica* 5, 942 (2018)), where $P^2 + C^2 = 1$ (polarization coherence theorem), P is the degree of polarization, V is the visibility, D is the distinguishability, and C is the concurrence, respectively.

- **DATE AND VENUE**

January 22, 2019 (Tuesday, 2:00 - 3:00 pm)
Seminar Room A (116), KU R&D Center

- **LANGUAGE**

Korean