

コヒーレント光科学セミナーのご案内

下記の要領でセミナーを開催いたします。

パラツキー大学／チェコ科学アカデミー物理学研究所共同光学研究所研究員の Pavlicek 氏が昨年 8 月に続き 3/19 に本学を訪問されます。

ついては下記の要領でセミナーを開催いたします。

今回は光による 3 次元計測の不確かさについてお話し頂きます。

研究室の研究者、学生の皆様もお誘い合わせのうえ、奮ってご参加下さい。

Coherent Optical Science Seminar on Information Optics

Date: Tuesday, 19 March 2019

Time: 13:30-14:30

Place: Room #803, East 6 Building, UEC

Speaker: Pavel Pavlicek, Joint Laboratory of Optics of Palacky University and Institute of Physics of Academy of Sciences of the Czech Republic, Olomouc

Title: Fundamental measurement uncertainty of 3D sensors

Abstract:

The measurement uncertainty of optical 3D measurement is investigated. The fundamental measurement uncertainty is related to shot noise. By use of Cramer Rao lower bound, the measurement uncertainty is calculated for several simplified models of 3D sensors. The analysis shows that the measurement uncertainty depends on the wavelength of used light, the number of photons used for the measurement, and on a factor that is connected with the geometric arrangement of the measurement setup.

Furthermore, an uncertainty principle between the position uncertainty and the wave vector uncertainty is identified. This means that the measurement uncertainty is minimized by maximizing the wave vector uncertainty.

Contact: Yoko Miyamoto

(Department of Engineering Science / Institute for Advanced Science,
yoko.miyamoto@uec.ac.jp)