TOHOKU FORUM for CREATIVITY

Tohoku Forum for Creativity Thematic Program 2015

Fundamental Problems in Quantum Physics: Strings, Black Holes and Quantum Information

International Workshop on Strings, Black Holes and Quantum Information

Entanglement and correlation of quantum fields in an expanding universe

Yasusada Nambu

(Nagoya U.)

Schedule:

Wednesday, September 9, 14:00-15:00

Place:

TOKYO ELECTRON House of Creativity 3F, Lecture Theater

Katahira Campus, Tohoku University

Abstract:

Large scale structures in our universe is originated from primordial quantum fluctuations generated by inflation. After the wavelength of generated quantum fluctuations becomes larger than the Hubble horizon, the qunatum nature of the fluctuations is expected to be lost and the statistical property of fluctuations is represented by the classical distribution function. We discuss this ``quantum to classical transition'' in the inflationary universe in terms of the quantum entanglement and the quantum estimation theory.