



No.51

IPPS Lecture & Seminar (大学間連携オムニバス講義)

Title : Challenging issues of future grids with grid connected power electronics converters: harmonics and standardizations

Lecturer: Prof. Firuz Zare [The University of Queensland, Brisbane Australia]

Date & Time : December 17 2019, 13:00–14:30

Venue : Kurokami South W2[Sogokenkyu-tou] (2F, 204)

Abst.: Due to an increasing number of grid connected high frequency power electronics converters (such as solar inverters, wind turbines and variable speed motor drive systems) low and high frequency harmonics (2–9 kHz and 9–150 kHz) and different disturbances have been reported in distribution networks around the world. Similar issues have been identified involving significant high frequency harmonic resonances in wind farms connected to low and medium voltage grids. These issues are classified as:

- generation of high frequency harmonics and fast transients creation of new resonant frequencies in grids, affecting communication signals
- strong interactions between grids and different types of power electronics systems, reducing reliability and quality of the grids The increasing demand for more efficient and reliable loads and renewable energy sources has promoted energy conversion systems extensively in industrial, commercial and residential sectors.

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