

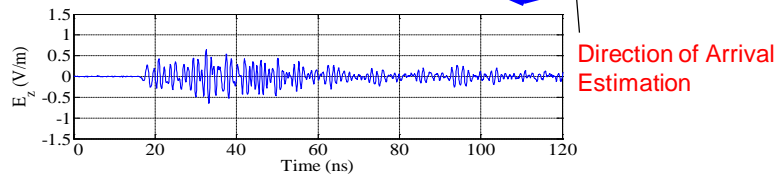
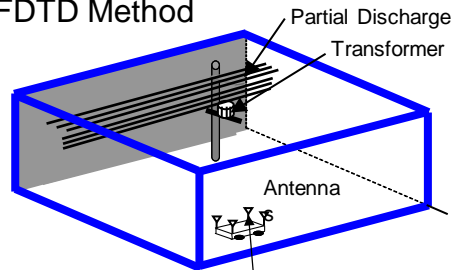


Faculty of  
Science and  
Technology  
Tokushima University

# Development of Diagnostic Techniques for Power Equipment Using Radio Remote Sensing and Signal Processing

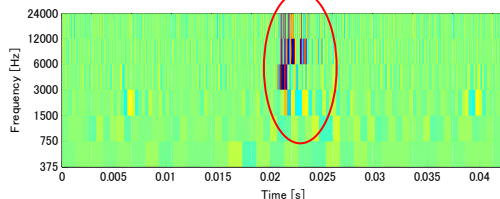
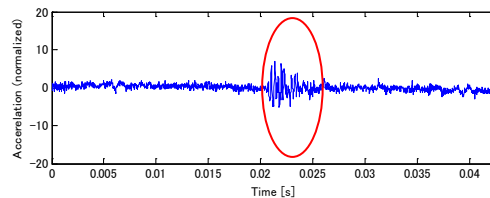
Professor Masatake Kawada

## Development of Insulation Diagnostic Techniques for Distribution Line Using FDTD Method



Electromagnetic Waves Emitted from a Partial Discharge Source, which is a Symptom of Deterioration of Insulating Materials.

## Detection of Abnormal Vibration Using Wavelet Transform



Time-Frequency Visualization of Abnormal Vibration

Content:

### 1. Subject

Can faults due to deterioration over time or unexpected faults occurring in power equipment be detected beforehand?

### 2. Research Contents

How to detect a symptom of faults ?

(1) Radio Sensing, to locate the positions of deterioration of insulating materials

(2) Signal Processing, to locate abnormal positions in turbines, generators, and pumps

### 3. Record of Joint Research

(1) Chubu Electric Power Co. Inc. and Mitsubishi Heavy Industries Ltd. for diagnosing turbine generators

(2) Chubu Electric Power Co. Inc. and Hitachi Ltd. for diagnosing pumps

(3) Railway Technical Research Institute for diagnosing ground coils of superconducting Maglev

Keywords : Radio Sensing and Signal Processing

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