

Events: Neural Networks and Related Mathematics

# Things: Electromagnetics, Wave Physics

## ● Bio Engineering

### ● Intelligent Wireless Systems

- Intelligent Remote sensing and imaging □ □
  - Satellite-borne / Airborne Synthetic Aperture Radar (SAR) Processing (Land & move observation, Vegetation & Ice & Land use, Geo Info) (Disaster Prevention & Reduction, Agricultural Evaluation, Global Warming Evaluation & Countermeasure Cooperation: JAXA ALOS-2 Satellite, NICT Airborne SAR, etc.)

Security Radar (Anti-Crime, Anti-Accident, Transportation Safety)

Ground Penetrating Radar (GPR) (Landmine Visualization, Buried & Ruin Exploration, Concrete & Road Inspection)

- Intelligent Channel Prediction, Adaptive Signal Processing
  - Mobile Communication Channel Estimation & Prediction
  - Adaptive Interference Elimination in Electromagnetic Measurement
  - Adaptive Ultrawideband (UWB) & Multi-Input Multi-Output (MIMO) Systems

## ● Propagation

Electromagnetic (EM) Wave Theory  
 Propagation Theory  
 EM Environmental Measurement

## ● New-Scope Antennas

Adaptive Antenna  
 Array Antennas for  
 Imaging and Sensing

### Engineering

Physics Physiol

Math Psychol

### Invention & Design

- Artificial Intelligence (AI) systems & devices
- Next Generation Brain-Inspired Information Processing Systems / Energy-Efficient Info. Proc. Sys.

*Reservoir Computing* & its devices

(Social Cooperative Program: Energy-Efficient Information Processing)

## ● Brain-Type Info Sys.

- Medical Practice Applications of Wireless Electronics
  - Biomedical Instrumentation
  - Intelligent measurement
  - Brain Mechanism Modeling and application to artificial intelligence (AI) (Bio-Engineering)

● Brain-Inspired Signal / Information Processing