

**3rd Annual Campbell Lecture in Environmental Soil and Water Science**



Part I.

# **Soil Information Monitoring by Field Server**

***Dr. Masaru Mizoguchi***

*Dr. Mizoguchi is Associate Professor of Soil Physics and Soil Hydrology at the University of Tokyo. Dr. Mizoguchi has B.S.(1982), M.S.(1984), and D.S.(1990) degrees, all in Soil Physics from the University of Tokyo. His appointment includes Assistant Professor of Agricultural Physics at Mie University, Japan (1984-1995), Visiting Assistant Professor at Purdue University, USA (1990-1992), Associate Professor of Soil Physics & Soil Hydrology at University of Tokyo (1999-present), and Deputy Director for Environment at the Council for Science and Technology Policy (CSTP), Cabinet office in Japan (2003-2004). He had been interested in experimental and simulated movement of soil water in frozen soil at the laboratory scale as a soil physicist before taking part in the GAME-Siberia project. Since he observed field soils in tundra and taiga regions in the summer of 1997-2000, he has been interested in the global water cycle including soil water movement in permafrost regions. Based on his experience of his field observation in Siberia, he is now developing Field Server that enables us to monitor fields and collect soil and meteorological data all over the world from a laboratory. In 2003, he has an opportunity to support the global warming and water cycle initiatives as a deputy director for Environment at CSTP, Cabinet office in Japan.*

**November 14, 2005**

**1:10pm lecture**

**Rm. 204, Johnson Hall**

**Refreshments served  
prior**



Field Server (FS) is a multi-functional sensor node, which consists of CPU (Web server), A/D converter, D/A converter, Photo-MOS relay, Ethernet controller, Wi-Fi card, high intensity LED lighting, network camera, and sensors such as air temperature, relative humidity, solar radiation, soil moisture. FSs are interconnected by Wireless LAN. High-resolution pictures of fields are transferred through Wi-Fi broadband networks, and stored on Web servers. Data sets of FSs are transformed into an XML database. In this seminar, he will show the results of soil moisture monitoring tests using some soil moisture sensors offered by Decagon, and discuss the availability and the possibility of FS in the agricultural field related to the Global Earth Observation System of Systems (GEOSS) 10-Year Implementation Plan.

*Campbell Lecture: Dr. Gaylon Campbell spent nearly 30 years as a professor of Environmental Biophysics and Soil Physics in the Crop and Soil Science Department at WSU. In 1998, he retired from the university to become the Vice President of Engineering at Decagon Devices, a local manufacturer of biophysical research instrumentation.*

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