

Visiting Scholar  
**Jiazhou Chen (Jeff)**



### **Research Field & Interests**

- Soil Water Dynamics in Vadose Zone
- Soil Water Movement and Plant Water Stress
- Water Erosion and Soil Structure Change
- Seasonal Drought in Central China Soils
- Bacteria transport in porous media. As a visiting member of Environmental Soil Physics at PLSC, UD, I am interested in the behavior of bacteria traversing the porous media. Specifically, the bacteria chemotaxis in channel/column filled with glass beads are focused. The project aims are 1) to identify the effects of porous media on bacteria chemotaxis; 2) to measure bacteria random motility coefficient and bacteria chemotactic sensitivity in porous media; 3) to validate or modify the bacteria chemotaxis mathematic models which may be applied in porous media; and 4) to discover the effects of the chemotaxis on bacteria transport in porous media, and further, to

integrate the chemotaxis model into a general model on bacteria/colloid transport in porous media. New assays are needed for the ambitious goals. The first attempt will be on micro slide channel under microscopy.

## **Education**

B.A.: Soil and Plant Nutrition, Northwest Agricultural University, Yangling, China, 1991

M.S.: Soil Chemistry, Huazhong (Central China) Agricultural University, Wuhan, China, 1994

Ph.D.: Soil Physics, Huazhong (Central China) Agricultural University, Wuhan, China, 2001

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## **Recent Selected Publications**

**Chen, Jia-zhou**, Lu Guoan, Wang Shi, Zhang Lili. Moisture profile characteristics of Red soil in drying course and soil layer drought index. Transactions of the Chinese Society of Agricultural Engineering, 2007, 23(4):11-16

**Chen, Jia-zhou**, Wang Shi, Zhang Li-li, Lu Guo-an. Response of Maize to Progressive Drought and Drought Threshold of Red Soil, Scientia Agricultura Sinica, 2007, 40 (3) : 532-539

Zhang, Li-li, **Chen Jia-zhou**, Lu Guo-an, Luo Yong, Wang Shuang. Study on predicting lower layer soil water content using surface soil moisture serial. Journal of Soil and Water Conservation, 2007, 21(3):162-165

Dai, Junfeng , **Chen Jia-zhou**. Study on the Intra-Annual Distribution Characteristics of the Water Budget in the Hilly Region of Red Soil in Northeast Jiangxi Province, China. *Wetland and Water Resource Modeling and Assessment*. Taylor & Francis Group, CRC Press, Boca Raton, 2007, 59-69

Dai, Jun-feng, **Chen Jia-zhou**, Cui Yuan-lai, and He Yuan-qiu. Impact of forest and grass ecosystems on the water budget of the catchments. *Advance in Water Science*, 2006, 17 ( 4 ): 435-443

**Chen, Jia-zhou** , Lu Guoan, and He Yuanqiu. Effects of soil water on leaf gas exchange in peanut and early rice. *Chin J Appl Ecol*, 2005, 16(1):105-110.

**Chen, Jia-zhou**, He Y-Q and Chen M-L. Water budget analysis of red soils in Central Jiangxi Province, China. *Pedosphere*, 2004, 14(2):241-246.

**Chen, Jia-zhou**, He Yuan-qiu, and Lu Guo-an. Soil water status of forest and grass ecosystems in red soil hilly region. *Journal of Soil and Water Conservation*, 2003, 17(2):122-125