

# Curriculum vitae

Dr. Jiansheng Cao:

Male, Master supervisor, Associate Professor of Center for Agricultural Resources Research, Institute of Genetics and Developmental Biology (IGDB), Chinese Academy of Sciences (CAS).

Research Field: Eco-hydrology processes and effective utilization of precipitation resources in mountain basins.

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## 1. Education

2007-09--2011-07, Ph.D, Ecology, Graduate University of Chinese Academy of Sciences,  
2002-09--2005-07, M.S., Ecology, Graduate University of Chinese Academy of Sciences,  
1994-09--1998-07, B.E., Irrigation and drainage engineering, Hebei Agricultural University

## 2. Professional experience

2015-12~ present, Center for Agricultural Resources Research, IGDB, CAS, Vice-Station Master  
(presided over the work)

2014-10~2015-12, Center for Agricultural Resources Research, IGDB, CAS, Vice-Station Master

2011-12~ present, Center for Agricultural Resources Research, IGDB, CAS, Associate Professor

2009-12~2010-03, Department of Land Hydrology, Faculty of geography, Moscow State  
University, Visiting Scholar

2005-12~2011-12, Center for Agricultural Resources Research, IGDB, CAS, Assistant Professor

1998-07~2005-12, Center for Agricultural Resources Research, IGDB, CAS, Research  
Probationer

## 3. Honors and Awards

- (1) The sixth Hebei provincial science popularization contribution award, provincial level, 2016
- (2) The Eleventh Hebei Provincial Youth Science and technology award, provincial level, 2013
- (3) Research and demonstration on the systematic technologies of ecological industry for two potatoes and under-forest in Yan mountain region, third-prize, provincial level, 2012
- (4) Research on ecological stability mechanism and eco-industrial technology in Taihang Mountain region, third-prize, provincial level, 2011
- (5) Research on technologies of sand prevention and control under autonomous participation in national capital region, third-prize, provincial level, 2011
- (6) Comprehensive development and demonstration of sand prevention and control technologies in agro-pastoral areas of Northwest Hebei, third-prize, provincial level, 2007
- (7) Research on rainwater transfer and technologies of regulation and utilization in Taihang mountain, third-prize, provincial level, 2005

- (8) 2014-01-01- present, Environment and Safety Testing Instrument Branch, China Instrument and Control Society, Director
- (9) 2004-01-01- present, Courtyard Economy Branch, Chinese Association of Agricultural Science Societies, Deputy Secretary-General

#### **4. Selected publications**

##### ***Patents granted***

- (1) An automatic system for measuring infiltration rate in saturated rock-soil layer, invention, 2006, the first author, patent number: ZL200410012474.4
- (2) A method for collecting slope runoff, invention, 2009, the first author, patent number: ZL200510048167.6
- (3) An automatic system for collecting storm runoff in small watershed, invention, 2009, the first author, patent number: ZL200510048184.X
- (4) The automatic method and device for measuring groundwater table fluctuations, invention, 2011, the first author, patent number: ZL200910075767.x
- (5) An agent for agglomerating bulk of soil organic matter and its preparation method, invention, 2009, the first author, patent number: ZL200810055033.0
- (6) A biological compatibilizer and its preparation method for improving soil water storage capacity, invention, 2011, the first author, patent number: ZL200810055031.1
- (7) An automatic measurement system for farmland irrigation, utility model, 2014, the third author, patent number: ZL201320833978.7
- (8) An method for the rocky mountain afforestation using the replaced soil with high water storage capacity, invention, 2016, the first author, patent number: 2016104426055
- (9) An automatic control system and method for greenhouse rainwater harvesting and irrigation, invention, 2016, the first author, patent number: 2016104421032
- (10) A automatic control system and method for deficit irrigation, invention, 2016, the first author, patent number: 2016104439089

##### ***Peer-reviewed papers at international journals***

- (1) Shen H., Zhang W., Cao J. \*, Zhang, X., Xu Q., Yang X., Xiao D., Zhao Y. Carbon concentrations of components of trees in 10-year-old *Populus davidiana* stands within the Desertification Combating Program of Northern China, *Front. Earth Sci*, 2016, 10: 662–668.
- (2) Huitao Shen, Jiansheng Cao (Co-First Author), Wanjun Zhang\*, Xinhua Zeng, Huaru Wang. Winter Soil CO<sub>2</sub> Flux from Different Mid-Latitude Sites from Middle Taihang Mountain in North China., *PLoS ONE*, 2014, 9 (3):e91589.
- (3) Cao, JS ,Zhang, WJ ,Qi, YQ. An automatic slope runoff sediment and flow monitoring system, *Applied Engineering in Agriculture*, 2014, 30(1):5-9.
- (4) Cao Jiansheng, Liu Changming, Zhang Wanjun. Response of rock-fissure seepage to snowmelt in Mount Taihang slope-catchment, North China. *Water Science and Technology*, 2013, 67(1): 124-130.
- (5) Jiansheng Cao, Changming Liu, Wanjun Zhang. Effect of integrating straw in to agricultural soils on soil infiltration and evaporation. *Water Science and Technology*, 2012, 65(12): 2213-2218.
- (6) Cao Jiansheng, Liu Changming, Zhang Wanjun, Shumin Han. Using temperature effect on

seepage variations as proxy for phenological processes of basin-scale vegetation communities. *Hydrological Processes*, 2013, 27(3): 360-366.

- (7) Jiansheng Cao, Xia Zhou, Wanjun Zhang, Changming Liu and Zhijun Liu. Effects of mulching on soil temperature and moisture in the rain-fed farmland of summer corn in the Taihang Mountain of China. *Journal of Food, Agriculture & Environment*, 2012,10(1):519-523.
- (8) Jiansheng Cao, Wanjun Zhang. Research on Shallow Groundwater Recharge and Control in Taihang Mountain Area of North China. *Advanced Materials Research Vols. 113-114 (2010)* pp 1572-1576.
- (9) Jiansheng Cao, Wanjun Zhang, Xuezan Feng. Farmers' independent participation in technical system of desertification prevention and control. *International Conference on Energy and Environment Technology, ICEET 2009*, v 3, p 345-348.

### *Peer-reviewed papers at Chinese journals*

- (10) CAO Jiansheng, DONG Wenxu, LI Xiaoxin, CHEN Suying, HU Chunsheng. Utilization state and thought on rainwater harvesting in Kenya, *Chinese Journal of Eco-Agriculture*, 2016, 2016, 24:987-994.
- (11) SHEN Hui-tao, ZHANG Wan-jun, ZHAO Yan-xia, CAO Jian-sheng. Effect of Straw Mulching on Soil Respiration of Maize Cropland in the Mountain Area of Hebei Province. *Journal of Sichuan Agricultural University*, 2016, 34(2):131-136.
- (12) Cao Jiansheng, Zhang Wanjun. Experimental investigation on instrument for auto-sampling water from runoff and sediment in a small catchment. *Transactions of the CSAE*, 2009, 25(1) : 45-49
- (13) Cao jiansheng, Zhang Wanjun, Liu Changming, Yang Yonghui. Field experiment on transfer of rainfall under the condition of ground surface mulched with small stones or stalk, *Journal of Hydraulic Engineering*, 2007, 38(3):378-382.
- (14) Cao Jiansheng Zhang Wanjun Liu Changming Han Shumin. Formation mechanism of instantaneous saturated zone and seepage characteristics in the slope of Taihang Mountain areas. *Transactions of the CSAE*, 2007, 23(5):14-20.
- (15) Cao Jiansheng Zhang Wanjun Liu Changming Yang Yonghui. Fractured rock seepage characteristics and its impact on slope stability. *JOURNAL OF BEIJING FORESTRY UNIVERSITY*, 2007, 29(4):136-142.
- (16) Cao Jiansheng Zhang Wanjun Liu Changming Yang Yonghui. Unsaturated seepage characteristics in the slope characterized by a weathered rock-soil dual entity. *Transactions of the CSAE*. 2007, 23(8):9-15.
- (17) Cao jiansheng, Zhang Wanjun, Liu Changming, Yang Yonghui. Water movement in slopes characterized by weathering layer of gneiss beneath a shallow soil layer, *Journal of Hydraulic Engineering*, 2007, 38(8):901-906.
- (18) Cao jiansheng, Zhang Wanjun, Liu Changming, Yang Yonghui. Slope hydrogeology and collecting seepage water techniques in gneiss area in the Taihang Mountains. *Advances in water science*. 2005, 16(2):216-221.
- (19) CAO Jian-sheng LIU Chang-ming ZHANG Wan-jun YANG Yong-hui. Field experiment on discharge of rain seepage from fissured rock in a catchment. *Journal of Hydraulic Engineering*, 2005, 36(11):1335-1340.

## **5. Selected Research Projects**

- (1) The three-dimensional configuration and management technology of shelterbelt to conserve farmland soil and water in the northern Rocky Mountain, hosted, national level, 2011-01--2015-12
- (2) Key technology research and integrated demonstration of high-efficient utilizing low-volume water resources, hosted, national level, 2014-01--2017-12
- (3) Key technology research and demonstration of the optimization model construction of mountain ecological landscape, hosted, provincial level, 2016-01--2018-12
- (4) Technology integration and model demonstration of afforesting in extraordinarily difficult lands in Taihang Mountain, hosted, provincial level, 2013-01--2016-06
- (5) Technology research on ecological and economic vegetation construction in ecologically vulnerable regions around Beijing and Tianjin, hosted, national level, 2014-01--2018-12