SONG Zhaoliang

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Biography

Zhaoliang Song Professor, Ph. D., mainly studies the coupled silicon-carbon cycle in terrestrial ecosystems including grasslands, forests and croplands of China. He has proposed the innovative idea that silicon is coupled with terrestrial biogeochemical carbon cycle through plant-enhanced silicate weathering, phytolith turnover and secondary aluminosilicate accumulation and improved the theory of coupled terrestrial biogeochemical cycles of silicon and carbon. He has gained innovative achievements in the fields of phytolith carbon sink, carbon sink of silicate weathering and silicon cycle regulation. His achievements can offer references for national and global carbon sink management practices. He has taken charge of many projects such as Program of National Natural Science Foundation of China. As a first and/or corresponding author, he has published 1 paper in EI journal, 25 papers in SCI journals (Average IF=3.6) including 9 papers published in international first class top SCI journals such as Earth-Science Reviews (IF=7.34) and Global Change Biology (IF=8.224), and gained 2 prizes of Liangxi Youth Paper Award. He has been chosen as the key person to be trained as young talent scientiest by several personnel training programs such as Distinguished-CORE, Distinguished Young and Middle-aged Academic Leaders of Higher Education Institutions of Zhejiang Province.

Academic Honors & Awards

2015.01 : Excellent Young Scientist of National Natural Science Foundation of China (NSFC)
2013.01 : Distinguished Young and middle-aged Academic Leader of Higher Education Institutions of Zhejiang Province
2013.01 : Top Young Talent of Zhejiang Agricultural and Forestry University
2012.01 : Liang Xi Youth Paper Award of Chinese society of forestry

Education/Employment

2015.07~Now, Institute of Surface-Earth System Science, Tianjin University, Professor,.
2003.07~2006.06, Ph.D., Geochemistry, Chinese Academy of Sciences,.
2000.07~2003.06, M.S., Geochemistry, Chinese Academy of Sciences,.
1996.07~2000.06, B.A., Geography, Ningbo University,.

Research

- Carbon sequestration from enhanced mineral weathering and the role of plants.
- Coupled biogeochemical cycles of carbon and silicon in terrestrial ecosystems.
- Phytolith and geochemical record of climate change and grassland evolution.
- Phytolith geochemistry: Isotopic composition, stability and C sequestration of phytoliths.
- Isotope and trace element geochemistry: Development and application of natural tracers of isotopes and elements to biogeochemical processes such as weathering and nutrient cycling in ecosystems.

Research Projects

(1) 2016.01~2019.12, Project supported by the Funds for International Cooperation and Exchange of the National Natural Science Foundation of China (Grant No. 41571130042), 'Study on the soil evolution, soil lithology and biological control mechanism of Karst critical zone', 3.5 million Yuan RMB, In study, Host,.
(2) 2016.01~2018.12, Project supported by the Funds for Outstanding young science foundation of the National Natural Science Foundation of China (Grant No.41522207), 'Study on the biogeochemical cycle of silicon-coupled carbon in terrestrial ecosystems', 1.5 million Yuan RMB, In study, Host,.
(3) 2013.01~2016.12, Program of National Natural Science Foundation of China (Grant No.31270667), 'Study on effect of land use on soil phytolith-occluded carbon in subtropical forest', 840 hundreds Yuan RMB, In study,.
(4) 2012.01~2014.12, Program of National Natural Science Foundation of China (Grant No.41103042), 'Study on phytolith stability of geochemistry and carbon sequestration in China with Phyllostachys edulis', two-hundreds thousands Yuan RMB, Finished, Hosted,.

Teaching

Graduate courses in the major were and

Selected Publications

(1) 20) Xiaomin Yang, Zhaoliang Song*, Leigh Sullivan, Hailong Wang, Zimin Li, Yutong Li, Fangfang Zhang. Topographical control on the production and return of PhytOC in moso bamboo ecosystems. Carbon Management, 2016, DOI: 10.1080/17583004.2016.1178398,.
(2) 18) Yuying Zhao, Zhaoliang Song*, Xiaotian Xu, Hongyan Liu, Xiuchen Wu, Zimin Li, Fengshan Guo, Wenjie Pan. Nitrogen addition increases phytolith carbon sequestration in degraded grasslands of north China. Ecological Research, 2016, 31: 117–123,.
(3) 24) Zhaoliang Song, Congqiang Liu, Guilin Han, Zhongliang Wang, Zhaozhou Zhu, Cheng Yang. Enrichment and release of rare earth elements during weathering of sedimentary rocks in Wujiang Catchments, SW China. Journal of Rare Earths, 2016, 24(4): 491–496,.
(4) 15) Xiaodong Zhang, Zhaoliang Song*, Kim McGrouther , Jianwu Li, Zimin Li , Ning Ru, Hailong Wang. The impact of different forest types on phytolith-occluded carbon accumulation in subtropical forest soils. Journal of Soils and Sediments, 2016, 16: 461–466,.
(5) 1) Zhaoliang Song*, Kim McGrouther, Hailong Wang. Occurrence, turnover and carbon sequestration potential of phytoliths in terrestrial ecosystems. Earth-Science Reviews, 2016, 158: 19–30,.
(6) 21) Fengshan Guo, Zhaoliang Song*, Leigh Sullivan, Hailong Wang, Xueyan Liu, Xudong Wang, Zimin Li, Yuying Zhao. Enhanced phytolith carbon sequestration in rice systems amended with basalt powder. Science Bulletin, 2015, 60(6):591–597,.
(7) 19) Xiaomin Yang, Zhaoliang Song*, Hongyan Liu, Nanthi S. Bolan, Hailong Wang, Zimin Li. Phytologenic variations of silicon in leaves of North-China's forests. Ecological Research, 2015, 30: 347–355,.
(8) 23) Beilei Li, Zhaoliang Song*, Hailong Wang, Fengshan Guo, Renyi Gui, Xiaoming Yang, Ruisheng Song. Phytolith carbon sequestration in bamboos of different ecotypes: a case study in China. Chinese Science Bulletin, 2014, 59(34): 4816–4822,.
(9) 14) Zhaoliang Song*, Hailong Wang, Peter James Strong, Fengshan Guo, Phytolith carbon sequestration in China's croplands. European Journal of Agronomy, 2014, 53: 10–15,.
(10) 11) Zimin Li, Zhaoliang Song*, Jean-Thomas Cornelis. Impact of rice cultivar and organ on elemental composition of phytoliths and the release of bio-available silicon. Frontiers in Plant Science, 2014, 5: 529(1-8),.
(11) 9) Beilei LI, Zhaoliang Song*, Hailong Wang, Zimin Li, Peikun Jiang, Guomo Zhou, Lithological control on phytolith carbon sequestration in moso bamboo forests. Scientific Reports, 2014, 4: 5262. DOI: 10.1038/srep05262,.
(12) 8) Beilei Li, Zhaoliang Song*, Zimin Li, Hailong Wang, Renyi Gui, Ruisheng Song, Phylogenetic variation of phytolith carbon sequestration in bamboos. Scientific Reports, 2014, 4: 4710. DOI: 10.1038/srep04710,.
(13) 6) Zhaoliang Song*, Hongyan Liu, Fengjun Zhao, Chongyang Xu, Ecological stoichiometry of N:P:Si in China's Grasslands. Plant and Soil, 2014, 380: 165–179,.
(14) 10) Zhaoliang Song*, Hailong Wang, P. James Strong, Shengdao Shan. Increase of available soil silicon by Si-rich manure for sustainable rice production. Agronomy for Sustainable Development, 2014, 34: 813–819,.
(15) 2) Zhaoliang Song*, Karin Müller, Hailong Wang. Biogeochemical silicon cycle and carbon sequestration in agricultural ecosystems. Earth-Science Reviews, 2014, 139: 268–278,.
(16) 13) Zhaoliang Song*, Jeffrey F. Parr, Fengshan Guo. Potential of global cropland phytolith carbon sink from optimization of cropping system and fertilization. Plos One, 2013, 8: 1–6,.
(17) 22) Zimin Li, Zhaoliang Song*, Peikun Jiang. Biogeochemical sequestration of carbon within phytoliths of wetland plants: A case study of Xixi wetland, China. Chinese Science Bulletin, 2013, 58(20): 2480–2487,.
(18) 7) Zimin Li, Zhaoliang Song*, Jeffrey F. Parr, Hailong Wang. Occluded C in rice phytoliths: implications to biogeochemical carbon sequestration. Plant and Soil, 2013, 370: 615–623,.
(19) 16) Zimin Li, Zhaoliang Song*, Beilei Li. The production and accumulation of phytolith-occluded carbon in Baiyangdian reed wetland of China. Applied Geochemistry, 2013, 37, 117–124,.
(20) 4) Zhaoliang Song*, Hongyan Liu, Beilei Li, Xiaomin Yang. The production of phytolith-occluded carbon in China's forests: implications to biogeochemical carbon sequestration. Global Change Biology, 2013, 19: 2907–2915,.
(21) 5) Zhaoliang Song*, Hongyan Liu, Yong Si, Yi Yin. The production of phytoliths in China's grasslands: implications to the biogeochemical sequestration of atmospheric CO2. Global Change Biology, 2012, 18(12): 3647–3653,.
(22) 3) Zhaoliang Song, Hailong Wang, P. James Strong, Zimin Li, Peikun Jiang. Plant impact on the coupled terrestrial biogeochemical cycles of silicon and carbon: implications to biogeochemical carbon sequestration. Earth-Science Reviews, 2012, 115(4): 319–331,.
(23) 12) Zhaoliang Song*, Songlai Zhao, Youzhen Zhang, Guoliang Hu, Zhihong Cao, Minghong Wong. Plant impact on CO2 consumption by silicate weathering: the role of bamboo [J]. The Botanical Review, 2011, 77(3): 208–213,.
(24) 17) Zhaoliang Song*, Shengdao Shan, Zheyue Song. Bioavailability and interaction of Si and P in a coastal saline soil amended with pig slurry [J]. CLEAN- Soil Air Water, 2011, 39(3): 212–218,.
(25) 25) Shengdao Shan, Zhaoliang Song*. Effects of natural fallow and pig slurry drip irrigation on phosphorus accumulation and fractionation in a coastal saline soil. Communications in Soil Science and Plant Analysis, 2010, 41: 2109–2121,.