2011 Fall Meeting
Search Results

Cite abstracts as **Author(s) (2011), Title, Abstract xxxxx-xxxx presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.**

Your query was:
lazareva karwan

HR: 1340h
AN: B33G-0549 Poster
TI: An integrated monitoring network for hydrologic, geochemical, and sediment fluxes to characterize carbon-mineral fate in the Christina River Basin Critical Zone Observatory
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AB: Organic carbon (C) -mineral complexation mechanism plays an important role in C sequestration within watersheds. The primary goal of the Christina River Basin Critical Zone Observatory in SE Pennsylvania and N Delaware, USA (one of six National Science Foundation-funded observatories) is to quantify net carbon sink or source due to mineral production and transport and its dependence on land use. This effort requires an interdisciplinary understanding of carbon and mineral fluxes across interfaces between soil, aquifer, floodplain, and river. We have established a monitoring network that targets hydrologic, geochemical, and sedimentological transport processes across channel-floodplain-aquifer interfaces within White Clay Creek Watershed. Within the channel, suspended material is sampled and analyzed for organic and mineral composition as well as geochemical fingerprints. Surface water and groundwater are analyzed for C, Fe, and Mn chemistry. Within the floodplain, in-situ sensors monitor soil moisture, pressure, temperature, conductivity, and redox potential. Integrated data analysis should yield estimates of water and solute fluxes between the vadose zone, riparian aquifer, and stream. Our preliminary data show that storm events are important for carbon and mineral fluxes—suspended material in surface water changes in source and composition throughout the storm. Meanwhile, the variation in stream stage drives surface water-groundwater exchange, facilitating changes in redox potential and providing opportunity for enhanced transport and reactions involving C, Fe, and Mn in the riparian aquifer.
DE: [0428] BIOGEOSCIENCES / Carbon cycling
DE: [0452] BIOGEOSCIENCES / Instruments and techniques
DE: [0461] BIOGEOSCIENCES / Metals
DE: [1848] HYDROLOGY / Monitoring networks
SC: Biogeosciences (B)
MN: 2011 Fall Meeting

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