Geophysical Research Abstracts
Vol. 17, EGU2015-14625-2, 2015
EGU General Assembly 2015

The contribution of vegetation to the soil signature in imaging spectroscopy at Reynolds Creek Critical Zone Observatory

Nancy Glenn (1), Luke Spaete (1), Aihua Li (1), Ryan Will (1), Chris Stanbery (1), Shawn Benner (1), Jen Pierce (1), Kathleen Lohse (2), and Mark Seyfried (3)

(1) Department of Geosciences, Boise State University, U.S.A., nancyglenn@boisestate.edu, (2) Idaho State University, U.S.A., klohse@isu.edu, (3) Agricultural Research Service, USDA, U.S.A., mark.seyfried@ars.usda.gov

Understanding soil carbon distribution is important for a number of reasons, including quantifying carbon stores and linking carbon storage variability to vegetation dynamics. At the Reynolds Creek Critical Zone Observatory (RC CZO) in Idaho, U.S.A., considerable efforts are underway to better quantify and map the spatial distribution of inorganic and organic soil carbon. In addition, numerous remote sensing techniques using imaging spectroscopy and lidar are under development to identify and quantify vegetation type, distribution and structure at the RC CZO. The RC CZO is approximately 240 square kilometers and is situated in the semiarid Great Basin of the sagebrush-steppe ecosystem. In this shrub-dominated system, spectral confusion between soils and vegetation is high, especially in areas with abundant non-photosynthetic vegetation (NPV) such as senesced grass and woody plant dominated areas. In this project, we explore the role of NPV to the contribution of soil spectral signatures using imaging spectroscopy data from AVIRIS-ng. Understanding the role of NPV in soil spectral signatures will improve the capability of imaging spectroscopy to assist with mapping soil carbon distribution across RC CZO.