

Measurements of Energy and Energetics: What can they tell us about Biogeochemical Reactions in Earth's Critical Zone?

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The presentation will cover different approaches to measuring energy associated with biogeochemical reactions and the use of this data to elucidate system properties and reaction dynamics of relevance to pertinent environmental issues. Focus will be placed on my research group's use of modern calorimetric measurements to study reactions at the sorbent-solution and organic matter-microbe interface; with implications for contaminant mobility and organic carbon dynamics. Additionally, I will discuss our current efforts on relationships between solar energy input and chemical transformations of organic matter in aquatic systems.