GCSC Seminar Series

September 13, 2016
4:00-5:00 PM

210 ASB
(Aline Skaggs Biology)

ALL ARE WELCOME

Refreshments & meet the speaker at 3:45

Marc Parlange

University of British Columbia, Department of Civil Engineering

"West African Savanna hydrology under landscape transformation"

Co-hosted by the Department of Mechanical Engineering

GLOBAL CHANGE AND SUSTAINABILITY CENTER
THE UNIVERSITY OF UTAH

ENVIRONMENT.UTAH.EDU

ABSTRACT

In partnership with local communities, we have been carrying out hydrologic field observations in the Savanna of Burkina Faso, a region under intense pressure due to the expansion of agriculture. The United Nations has recommended that West Africa consider a further expansion of agriculture as part of a greening of the region. The assumption, for rain fed agriculture, is that statistically on average the rainfall in the region remains constant. Our observations and models demonstrate that there is a 10% to 30% reduction of rainfall due to changes in the surface energy balance following landscape transformation (e.g. stone and tree removal). The change to the sensible heat flux is key in driving local convection precipitation patterns. Some possible strategies to mitigate a regional precipitation reduction are offered.

BIO

Dr. Marc Parlange is the Dean of the Faculty of Applied Science at the University of British Columbia, and is a Professor in the Department of Civil Engineering. Prior to assuming his position at UBC in 2013, he served as Dean of the School of Architecture, Civil and Environmental Engineering at the École Polytechnique Fédérale de Lausanne, and held faculty appointments at Johns Hopkins University and the University of California at Davis. His research in the broad area of environmental fluid mechanics primarily relates to the measurement and simulation of air and water flows over complex terrain, with a focus on how air turbulence and atmospheric dynamics (atmospheric boundary layer flow) influence water evaporation and transpiration in plants and soil. He is also active in addressing water resources challenges in remote communities through his research on hydrology and climate change. He has received numerous awards for his academic achievements, including the Macelwane Medal of the American Geophysical Union in 1997 and the Dalton Medal of the European Geosciences Union in 2007.