

ES04: Morphodynamics of River Systems

Conveners: Jeremy Venditti^{1,3}, and Brett Eaton^{2,4}

Co-chairs: Lucy MacKenzie^{2,5}, Dan Haught^{1,6}, and Ryan Bradley^{1,7}

¹ Department of Geography, Simon Fraser University, Burnaby, BC, V5A 1S6

² Department of Geography, University of British Columbia, Vancouver, BC, V6T 1Z2

³ Phone: 604 767 2247, E-mail: jeremy_venditti@sfu.ca

⁴ Phone: 604 354 0079, E-mail: brett.eaton@.ubc.ca

⁵ Phone: 778 689 2416, E-mail: lucy.mackenzie@geog.ubc.ca

⁶ Phone: 604 715 0690, E-mail: daniel.haught@gmail.com

⁷ Phone: 778 847 9407, E-mail: rwbradle@sfu.ca

Session Description

The interaction of fluid flow, sediment movement and topographic change in river systems give rise to a wide range of channel morphologies and patterns. It is widely thought that the morphology of rivers is invariant with scale, but there is emerging evidence that many of the world's largest river systems exhibit behaviors and morphologies that differ from smaller scale channels. While the physics of fluid flow and sediment transport must be scale invariant, the dominant processes appear to vary across rivers of different sizes. This has important implications for predicting the behavior of river systems as well as understanding sediment deposits and the rock record. The goal of this session is to draw together geomorphologists, sedimentologists, and river engineers to explore the dynamics of rivers across all scales. Topics may include alluvial river channel dynamics, morphodynamics of fans and deltas, bedform dynamics, scale effects on flow and sediment transport processes, external forcing (geological or climate) on river dynamics and controls on the architecture of river channel and floodplain deposits. We welcome studies that use field, experimental, theoretical and numerical approaches to understand the morphodynamics of rivers.

Primary Affiliation: CGU Earth Surface Processes