

SEMINARI DE RECERCA



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH
Departament d'Enginyeria Civil i Ambiental



Channelization of an Arid Permafrost Landscape: Observations and Synthesis

Shawn Chartrand

Assistant Professor, School of Environmental Science, SIMON FRASER UNIVERSITY



SIMON FRASER
UNIVERSITY

dilluns 27 de febrer, 9:30-10:30, aula 216, D-2, Campus Nord
Departament d'Enginyeria Civil i Ambiental

contacte: Carles Ferrer Boix (carles.ferrer@upc.edu), Centre de Recerca Aplicada en Hidrometeorologia



Channelization of an Arid Permafrost Landscape: Observations and Synthesis.

Arctic landscapes are undergoing rapid environmental change due to a warming climate marked by accelerating seasonal variability and amplification of summertime warming. Examples include large mass failures due to retrogressive thaw slumps, and channelization of valleys and hillslopes that were recently covered by ice. Expansion of existing channel networks and gullies has previously been attributed to thermal erosion of permafrost, which leads to tunneling, subsequent ground collapse and channel head advancement. Here, we examine channelization at the drainage basin scale, using a ground-based high resolution 3D LiDAR survey, combined with historical aerial imagery of Muskox Valley located on the east side of Axel Heiberg Island, Qikiqtani Region, NU, the Canadian Arctic Archipelago. Our observations suggest that landscape channelization occurs through a variety of processes, not simply thermokarst erosion. In our talk we will begin to outline a path forward to advance the understanding of channelization in cold regions, which includes the development of new understanding at the intersection of fluvial and cryospheric sciences.



De Kennonv de Wikipedia en inglés - Transferido desde en.wikipedia a Commons., CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=3956293>

Shawn Chartrand is a geophysical and environmental scientist, assistant professor at Simon Fraser University (Vancouver, Canada). His research focuses on how rivers form and co-evolve with landscapes. He has particular interest in mountain rivers and cold regions of the Arctic. Shawn uses field campaigns, physical experiments and theory development to address basic research questions. He applies his research to improve how professional scientists approach and develop river restoration plans, including the removal of dams.

