PRESENTER
Arthur Broadbent

Snowmelt triggers **rapid shift** in **microbial** community composition and **functioning**

Seasonal transitions in soil microbial community composition and function triggered by snowmelt in Alpine grasslands

INTRO

- Snow insulates soil, allowing distinct microbial communities to function in winter
- Climate change is leading to reduced snow cover and earlier spring snow melt
- But impacts on soil microbial communities, their functioning and the consequences for biogeochemical cycles remain unclear

METHODS

- Treatments:

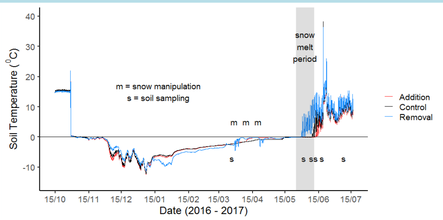
control, snow removal, snow addition

- Sampling dates:

Pre-melt (28 Mar)
Snow-melt (1 Jun, 8 Jun)
Post-melt (12 Jun, 18 Jun, 8 Jul)

- Variables:

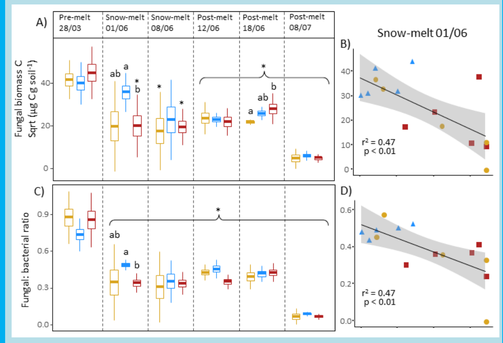
Microbial composition (PLFA, 16S, ITS)
Microbial functioning
(enzymes, metagenomics)
Biogeochemical cycles
(soil C and N pools, fluxes)

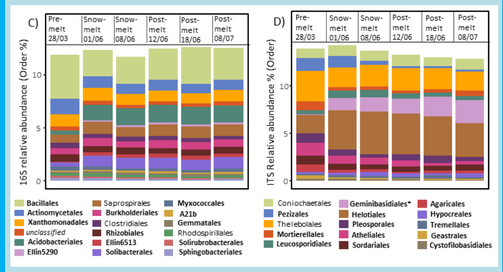


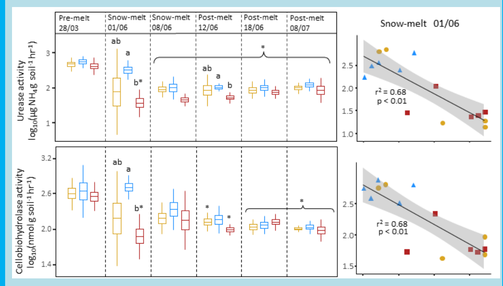
RESULTS

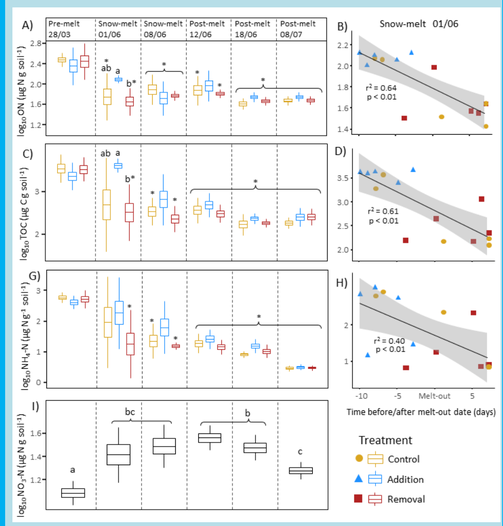
- Snow removal led to advancement of seasonal transition from winter to summer soil microbial community
- Snow addition led to delay in transition
- Treatment effects relatively transient but will likely become more important under future climate projections

Will earlier snowmelt = **weakened winter functioning** of alpine grasslands?









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