

Does luminescence of modern fluvial sediments vary according to erosion rate?





A comparison between single-grain feldspar luminescence signal and and 10Be cosmogenic catchment-wide erosion rate in the Southern Alps of New Zealand





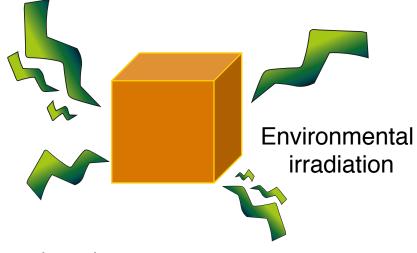




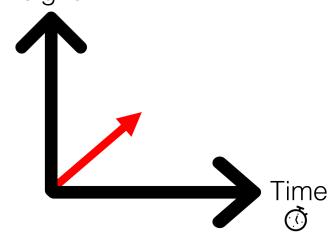
EGU 2022 GM2.4

HOW DOES IT WORK?

Grains are buried (e.g. in floodplains)



Luminescence signal

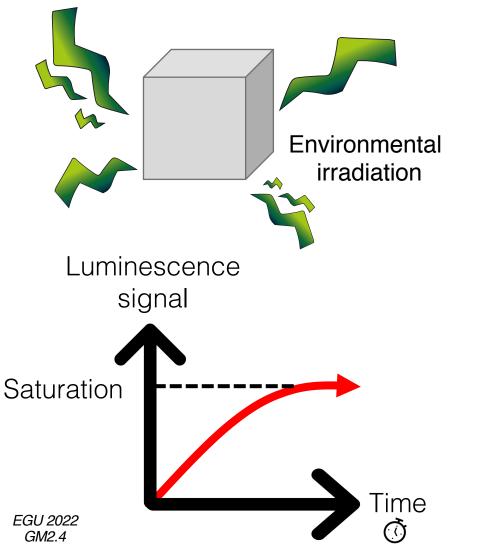




LUMINESCENCE

HOW DOES IT WORK?

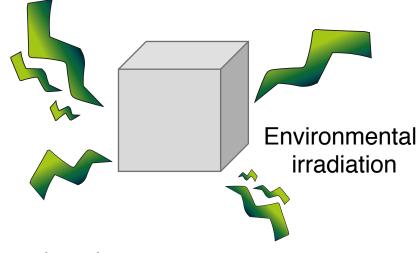
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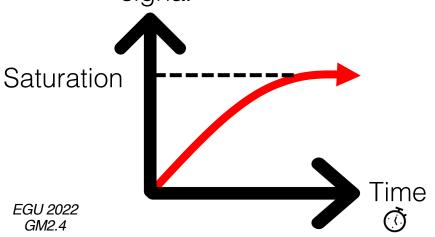


HOW DOES IT WORK?

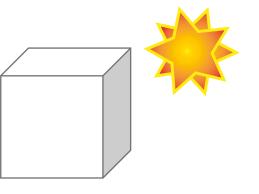
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Luminescence signal

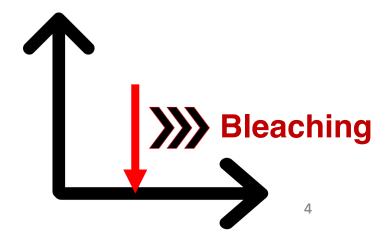


Grains are exposed to sunligth



PERSPECTIVES

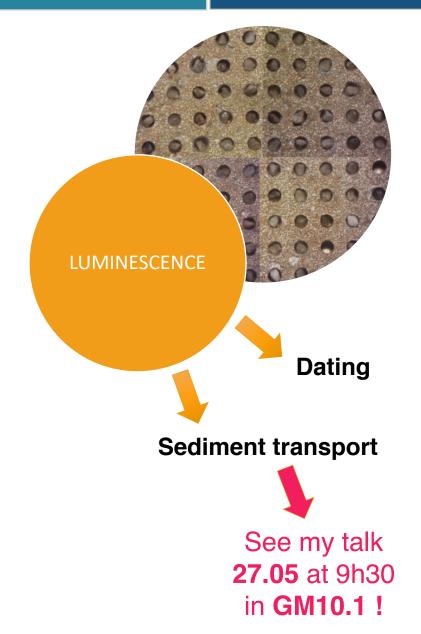
Luminescence signal is reset



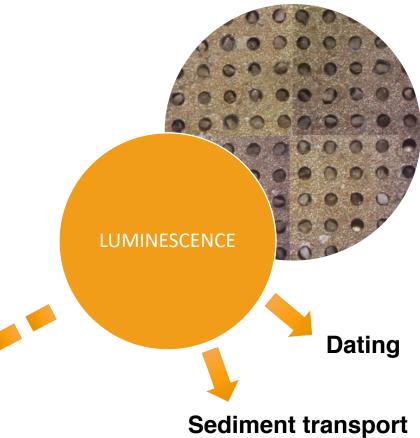
LUMINESCENCE NATURAL SYSTEM RESULTS PERSPECTIVES



Averaged on catchement

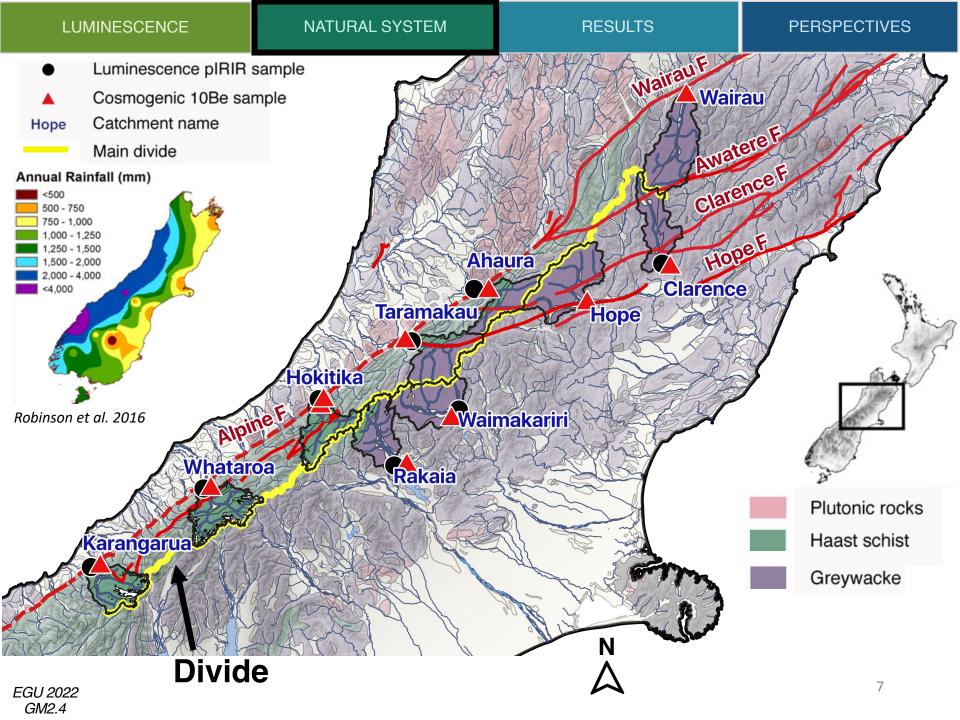




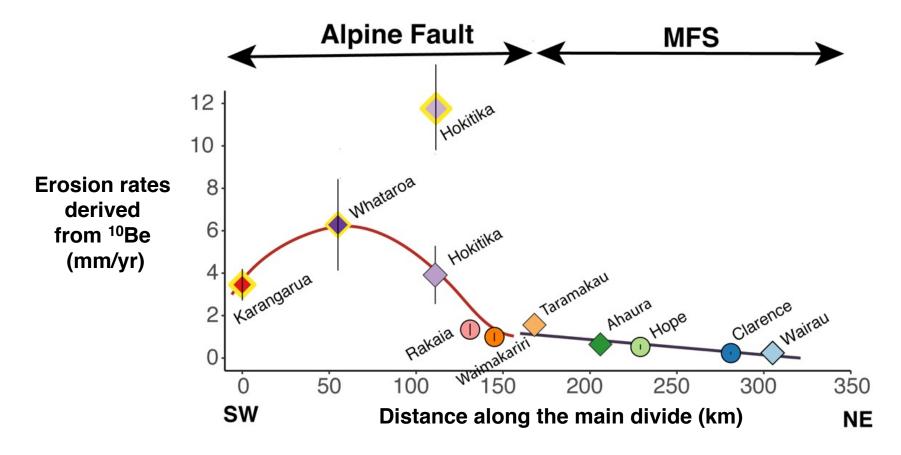




See my talk **27.05** at 9h30 in **GM10.1!**

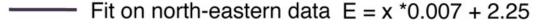


EROSION RATES from cosmogenic radionuclides ¹⁰Be





[10Be] from Larsen et al (2014)

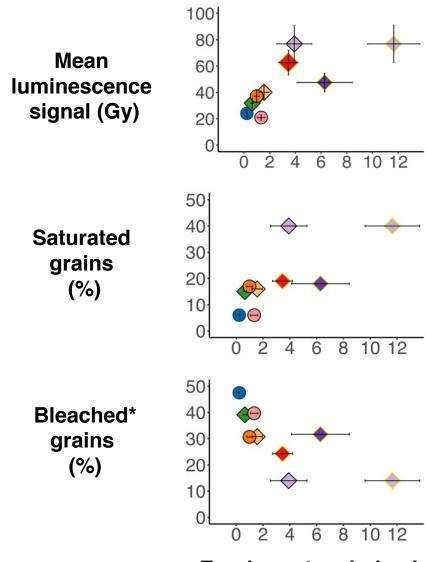


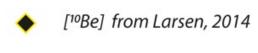


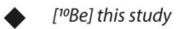
[10Be] this study

Tendency of south-western data

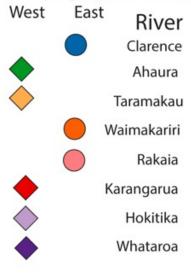
Luminescence VS cosmogenic radionuclides ¹⁰Be







Side on the topographic divide



Hypothesis 1 Primary signal related to denudation on the slopes

Hypothesis 2 Secondary signal related to transport in the river

