

# Quantifying Alluvial Fan Sensitivity to Climate – EGU 2017 Conference Attendance Grant Report

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## EGU General Assembly 2017, Vienna

The **£500** awarded for the attendance of the EGU GA enabled me to present both a poster and give a talk at the largest yearly gathering of geologists and geomorphologists in Europe. As well as presenting, the exposure to recent developments in geomorphology and surface processes from world-class institutions including Potsdam GFZ, ETH and Caltech has been of great benefit to an early career scientist such as myself. The feedback from scientists on the work I have been conducting such as the BSG-funded field work in Death Valley and landscape evolution modelling has been very encouraging.

## Presentations

I gave a talk entitled *"Decoding sediment transport dynamics on alluvial fans from spatial changes in grain size, Death Valley, California"* that was given to the Erosion and Sedimentation in Mountain Landscapes session. The talk outlined how we can successfully measure statistical grain size change over glacial-interglacial transitions and how alluvial fan grain size distributions are demonstrably self-similar, enabling us to decode the relative mobility of different grain sizes.

As part of the continuation of my landscape evolution model work, I presented a poster entitled *"Quantifying alluvial fan sensitivity to climate in Death Valley, California, from field observations and numerical models"*. The poster presented the recent developments in a simple 1D catchment-fan model we have developed in order to understand how landscapes may respond to changes in precipitation. Sensitivity analysis and testing the model with simple vs. noisy rainfall signals shows that arid climates such as Death Valley are highly sensitive to changes in rainfall fluctuations and variability.

## Other Highlights

During the conference I was keen to attend the demonstration stand for the Google Earth Engine browser-based GIS platform. I had a long conversation with one of the developers to aid the development of my own code and scripts leveraging their system that will be of great benefit to my current remote-sensing research on the alluvial fans in Death Valley.

As a follow-up to the EGU conference, I was also able to attend the Steepest Descent surface processes meeting, a much more focussed event that provides a great opportunity to network and listen to longer format more in-depth talks on a range of topics in geology, geomorphology and planetary science.

## Use of funds

The money awarded by BSG went directly to cover flights, accommodation, conference registration and abstract submission fees. I would wish to thank the BSG Research Committee for their financial support that made my attendance at EGU possible.

