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Interactive comment on "OCTOPUS: An Open Cosmogenic Isotope and Luminescence Database" *by* Alexandru T. Codilean et al.

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Dear Greg

You are absolutely right in the ephemeral nature of calculated CRN exposure age and erosion rate values. And thanks to the CRONUS online calculators that you have created, a large part of the community has also come to realise this.

The CRONUS online calculators have achieved the following:

(1) No more designer ages where people could mix and match production rates and scaling schemes to produce an exposure age favourable to a particular hypothesis;

(2) Data reporting standards that have meant that majority of published exposure ages

and at-a-site erosion rates are reproducible;

(3) Easy checking of published values by reviewers and readers, as all that needs to be done is copy the data from the published table and paste into the online calculator.

However, as you know, reproducing published basin-wide denudation rates is somewhat different.

First one needs to know the sampling location coordinates precisely enough to be able to identify the stream on a DEM. Second one needs access to a DEM with a resolution appropriate to the size of the drainage basins. Further, one might need information on properties such as the geology of the basins, glacial cover, etc. And then there are questions on scaling schemes and production rates. . .

In many cases, papers do not report sample location coordinates with enough precision (decimal places) to make identification of streams non-trivial. Also, in many instances where proprietary high-resolution DEMs are used, these will not be publicly available to people other than the authors of the original study. In many cases one can also forget about obtaining a copy of the script used by authors to derive the published values.

Thus, I guess prior to OCTOPUS, the basin-wide denudation rate world was where the exposure age world was prior to the CRONUS online calculators.

Thanks to CAIRN we now have a freely and openly available open source program for calculating basin wide denudation rates, and via OCTOPUS we have recalculated the majority of legacy data (by the way, we endeavoured to include absolutely every published study, but inevitably missed a few) and provide a globally consistent and fully reproducible dataset.

The process of harvesting the published values, locating streams, extracting basins, and then prepping the data for CAIRN was a time consuming task, but once done, it does not have to be repeated ever again, thanks to OCTOPUS providing access to all necessary info and files.

I hope you agree that the above is a non-trivial contribution to the community.

The next question, then, is whether you consider the WFS capability a “direct, granular access to data reports”?

Thanks Tibi

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