EGU21-10183
https://doi.org/10.5194/egusphere-egu21-10183
EGU General Assembly 2021
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Estimating the global geomorphological importance of ants in the Anthropocene

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Ants are active, numerous and widespread across most landscapes on Earth. They are known to be geomorphologically important, through a range of activities (such as production of galleries and mounds) by which they move and store sediment both above and below ground. They also co-exist and interact with a wide range of other geomorphologically-active organisms, sometimes resulting in complex influences on the landscape (as ant mounds can influence soils and plant biodiversity, for example). Human impacts in the Anthropocene are having direct and indirect impacts on the geomorphological importance of ants – through species invasions, climate change etc. A geolocated database of over 100 studies, covering more than 60 ant species, carried out in Europe, Africa, South America, southern Africa, USA and Australia, is used to produce some estimates of the global impacts of ants within the Anthropocene, including a first order estimate of 7.5 – 10 Gt sediment moved per year by ants across the land surface.