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## Fluvial organic carbon flux from an eroding peatland catchment, southern Pennines, UK

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**Abstract.** This study investigates for the first time the relative importance of dissolved organic carbon (DOC) and particulate organic carbon (POC) in the fluvial carbon flux from an actively eroding peatland catchment in the southern Pennines, UK. Event scale variability in DOC and POC was examined and the annual flux of fluvial organic carbon was estimated for the catchment. At the event scale, both DOC and POC were found to increase with discharge, with event based POC export accounting for 95% of flux in only 8% of the time. On an annual cycle, exports of 35.14 t organic carbon (OC) are estimated from the catchment, which represents an areal value of  $92.47 \text{ g C m}^{-2} \text{ a}^{-1}$ . POC was the most significant form of organic carbon export, accounting for 80% of the estimated flux. This suggests that more research is required on both the fate of POC and the rates of POC export in eroding peatland catchments.

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