EGUsphere, referee comment RC1
https://doi.org/10.5194/egusphere-2022-705-RC1, 2022

Comment on egusphere-2022-705

Anonymous Referee #1

Referee comment on "Environmental and hydrologic controls on sediment and organic carbon export from a subalpine catchment: insights from a time series" by Melissa Sophia Schwab et al., EGUsphere, https://doi.org/10.5194/egusphere-2022-705-RC1, 2022

In this manuscript, the authors present a substantially long time-series of isotopic and hydrographic measurements to understand carbon cycling patterns along the Sihl River and basin. The strength of this manuscript is its clear goal and approach. The study uses a mixture of "traditional" methods to measure carbon cycling (POC and DOC collection via filtration, and thorough subsequent geochemical analysis (2.3)) and new computational methods such as machine learning. Many of the terms / methods described in 2.5 and 2.6 are new to me as someone largely unfamiliar with machine learning algorithms; however, this does not negatively impact the article's "result traceability", and there is significant precedence provided for each decision via citation of previous literature.

One minor comment / question (Line 132). I'm unfamiliar with this method of storing DOC samples, and am surprised they were not frozen. I'm wondering if the effects of acidification versus freezing was considered in the method, or interpretation of results? See Walker et al., 2016 https://doi.org/10.1017/RDC.2016.48

Overall, I find this manuscript very strong and support straightforward publication.