

## ***Interactive comment on “Lignin oxidation products as a vegetation proxy in stalagmite and drip water samples from the Herbstlabyrinth, Germany” by Inken Heidke et al.***

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Lignin oxidation products as a vegetation proxy in stalagmite and drip water samples from the Herbstlabyrinth, Germany

This good scientific work coupled the study of lignin products in dripwater and in stalagmite to discuss the interest of these biomarkers as vegetation proxy. It is well written and illustrations are good and readable. But, results don't support that so accurate title. This work demonstrates the interest of lignin metabolites as "global environmental" proxy including soil activity, climate and vegetation which have to be unraveled.

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I recommend moderates reviews

My general concern is the need of a more detailed discussion of the transfer of these biomarkers through karst system. This work discusses the lignin transfer without taking into account their interaction with organic substances in the soil, during the transfer and in the stalagmite. Authors should include some literature and discussion about that link (see Lehman et al 2014 for instance).

A second concern more specific is the lack of a discussion of the Wynn et Brooks (20014) paper which give an accurate discussion about methodology for biomarker analyses in speleothem.

More detailed comments are done on the PDF.

Please also note the supplement to this comment:

<https://www.clim-past-discuss.net/cp-2019-5/cp-2019-5-RC2-supplement.pdf>

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Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2019-5>, 2019.

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