

RESPONSE TO THE REVIEWER COMMENT OF NICOLAS BRÜGGEMANN REGARDING THE MANUSCRIPT “TEMPORAL DYNAMICS OF TREE XYLEM WATER ISOTOPES: IN-SITU MONITORING AND MODELLING”

We would like to thank Nicolas Brüggemann for the time he has taken to read our manuscript and his helpful comments to improve it. The technical corrections have been incorporated in the current revision of the paper.

Regarding the criticized lack of discussion of dispersion and diffusion effects:

It lies in the nature of the convolution approach, that dispersion and diffusion cannot explicitly be represented, since the convolution itself is not process based at all. However, by fitting a suited parametric distribution, many effects resulting from physical processes, can roughly be reflected by a convolution. Consequently, we do not think that an explicit incorporation of dispersion and diffusion into our computations lies within the scope of this study.

We have extended section **4.4 Interpretation of FPLDs** to clarify that dispersion is implicitly accounted for within our modelling approach and that a more explicit representation of it would require a whole different type of model.