

Atmos. Meas. Tech. Discuss., author comment AC3
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Reply on RC3

Marc Prange et al.

Author comment on "Are elevated moist layers a blind spot for hyperspectral infrared sounders? A model study" by Marc Prange et al., Atmos. Meas. Tech. Discuss., <https://doi.org/10.5194/amt-2021-48-AC3>, 2021

The authors thank the referee for their comprehensive and constructive comments. We want to limit this initial response to convey our general notion regarding the referee's primary concern, namely the scientific value of our study.

The referee expresses their struggle in trying to see added scientific value in our study with respect to the "body of knowledge" in hyperspectral remote sensing established over the past decades. We view this point as closely coupled to the referee's initial question, "**Who is your target audience?**" (<https://doi.org/10.5194/amt-2021-48-RC2>). As pointed out in our initial response, our target audience is less the retrieval and data assimilation community, to whom we agree, the deployed retrieval methods and analysis tools barely offer new insights. Also, the general idea of a temperature dependence of the humidity retrieval is nothing new as we elaborated in our previous response. We plan to have our manuscript better reflect what exactly is established knowledge and where we contribute new ideas and analysis, which is with respect to the specific use case of EMLs. To do so, we will try to be more explicit about this in the text and expand our literature list by some of the studies proposed by the reviewer and . Our goal is to make it obvious for the reader that the focal point of our study is the question of how well moisture anomalies in the mid troposphere can be captured by IASI – given a quite standard physical retrieval scheme – and not on advancing retrieval methods.

While the discussion phase is now ending, we hope that with a revised version of the manuscript we will be able to find common ground with the referee regarding the scientific value of our study, which of course is very important to us. We look forward to improving our manuscript and thank the reviewer for their constructive comments that will significantly contribute to that.