Comment on hess-2022-95
Ty P. A. Ferre (Referee)


This is a very useful 'flag in the sand' to indicate the current state of geophysical methods and to put them in context with hydrologic challenges for which they may be relevant. The authors' list is a veritable who's who of hydrogeophysics. Impressive. The only minor addition that I would have liked to see is some mention of the potential role of geophysics in the growing applicaitons of machine learning in hydrogeology. This seems a natural fit that may well alleviate some of the problems of both fields - hydrology and geophysics. The use of ML in hydrology is limited by a lack of data that can be collected by direct means - hydrogeophysics can help to address that. Geophysics is limited because we apply very limited, simplistic petrophysical models and geophysical forward models. Perhaps a less-model-dependent interpretation with ML could alleviate that. I'll leave it to the authors to decide whether they want to open this door. But, it seems to me that a paper that is marking what the field sees as the near future might want to offer an opinion on this!

Nice work!

Ty Ferre