

Interactive comment on “A soil moisture monitoring network to characterize karstic recharge and evapotranspiration at five representative sites across the globe” by Romane Berthelin et al.

Anonymous Referee #2

Received and published: 21 October 2019

This paper propose an interesting network for monitoring soil humidity in contrasted karst area. This experiments have a high potential to understand subsurface flow in karst and I recommend the publication. With 5 places in the world, the ambition to discuss impact of climate on recharge seems unrealistic, but the device is well design to validate models with a dataset including a large range of variability/configurations. Introduction: At the system scale, rainfall/discharge models are the one of the most popular method to quantify the karst recharge. This should be mentioned with examples. The aims of this paper is to propose a soil moisture monitoring network in

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karst area. This is not the first time that the soil moisture is monitored in karst area, I know some examples in China, in Houillon et al. 2016 as part of the SNO KARST in France with interesting results. This should be mentioned in your introduction. L11 Hartmann et al. 2014 are not the first to use tracer in karst system, if it is the most popular approach, older references should exist. I wonder if all the selected sites are included in areas where precipitation and ET0 are known? Otherwise Future models of soil moisture partitioning will have low constraint. To fully valorize a 15 min sampling rate, the rain gauge should be close to the monitoring device and have the same sampling rate. In the same way concerning valorization of this dataset, are this site located in catchment where regional karst spring is also monitored? This should open nice confrontations between entire aquifer approaches and the proposed one. This could be mentioned in the manuscript. Slope is one of the main driver to describe infiltration in soil, as mentioned P4L2. The value of the slope are not given. Are all the site located in the same range of slope value? Photo suggest that site are all in flat areas? In the same way, the geomorphologic location can be a main driver: upper part of a plateau or depression areas where preferential recharge take place? This could be mentioned. Soil description is mainly qualitative, what about bulk density, porosity, conductivity. The observed (non)sequential reactions can be explain by properties heterogeneity with deep. At this scale, the decrease of properties with depth suggested in introduction is not obvious and should be validated site by site. If you choose to present monitoring network into a GI paper, without waiting for more results, this suggest that this network is design for a long time. In conclusion, you speak about 3 years, it is surprising.

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https://doi.org/10.5194/gi-2019-22, 2019.](#)

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