

***Interactive comment on “Detailed detection of fast changes in the active layer using quasi-continuous electrical resistivity tomography (Deception Island, Antarctica)” by Mohammad Farzamian et al.***

**Anonymous Referee #1**

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In this study, presented by M. Farzamian et al. a quasi autonomous electrical resistivity tomography was applied in Crater Lake research site, Antarctica. The study shows the potential to describe fast changes in the active layer of a remote permafrost dominated region with a relatively easy measurement set up. The overall quality of the paper is good, I have only minor points to add or change:

1) p. 3., l. 30 : Please reconsider citing order, this seems a bit odd! 2) p.5 : Are the snow fields interpolated from the mini loggers? If so, how? Could Machine Learning be a method in addition to the camera? 3) p.7, l.11 : How does RES2DINV robust inversion

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better resolve the contrasts? Please elaborate! 4) p.16., l.11 : Can these processes be linked to a mass balance of the active layer? This would help to understand the hydrological processes taking place in this system. 5) Discussion and outlook: How can this knowledge be transferred into new research? Would a new modelling technique enhance us to get more information from this data? Think about physical Agent-based models (Mewes & Schumann 2018: IPA (v1): a framework for agent-based modelling of soil water movement): The continuous ERT data could be the basis for dynamic models like the one presented by Mewes and Schumann.

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Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2019-39>, 2019.

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