Rapid methods for assessment of soil compaction at various spatial scales are much needed and near-surface geophysics is increasingly becoming popular to address this challenge. In this work, the authors compare and contrast the suitabilities and limitations of electromagnetic induction and electrical resistivity tomography methods for assessing soil compaction by considering the spatial resolution and scale aspects. I commend the authors for this valuable contribution towards managing expectations on sensors' efficacy and I believe this article is an excellent fit for the special issue on Agrogeophysics. I suggest the authors do a moderate revision before it can be accepted for publication.

General comments:

1) Please refrain from using abbreviations in the title, figure captions and at the beginning of the sentences. Please define abbreviations before their first usage. Also, please use the same terminology for the sensing technology consistently, e.g., replace DC-current with electrical resistance tomography (ERT).
2) The abstract needs to be more focused and highlight the work's unique contribution. Please consider revising.
3) Kindly improve the figures especially Fig. 1 and 2. In Fig. 1, it would be nice to see the location of the inset in Fig. b., also please change "FDR" to "TDR" in the legend. Are the tramlines orthogonal to the seeder traffic? In Fig. 2a, please present the maps in 2D rather than 3D. In the current form, it is difficult to see the ECa variability in deeper measuring channels.

Specific comments:

1) In lines 45-50, "moisture EC-derived content" should be "EC-derived moisture content".
2) In lines 115-120, "Electro-Magnetic Induction" should be "Electromagnetic induction".
3) In lines 140-145, "Cumulative Sensity (CS)" should be "Cumulative Sensitivity (CS)". I think it would also be nice to include a reference here on the inversion codes based on the CS forward model.
4) In lines 145-150, "8 cross-transects". It would be nice to see them in the Fig. 1.
5) In line 170, "discharging" should be "removing"?
6) In lines 185-190, "The number of homogeneous areas were automatically selected resulting in four clusters". This statement needs further explanation on what basis. Is it the Elbow method or the Silhouette score?
7) In lines 205-210, "Indeed, EC soil properties showed a non-normal distribution." This sentence needs to be revised. Do you mean you used Spearman's coefficient because you expect the relationship to be monotonous?
8) In lines 230-235, "FDR" should be "TDR".
9) In lines 300-305, Please see if you find any rule-of-thumb to define categories from strong to weak.
10) In lines 370-375, "In addition, it is crucial to remember that in the presence of a conductive soil, most of the signal at higher frequencies is conveyed, via electromagnetic induction, in the topmost layer, decreasing the depth of investigation." Do you mean that most of the currents stay within the top soil and do not diffuse to the subsoil?

All the best!