

Reviewer #1:

SOIL Discuss doi:10.5194/soil-2016-18, 2016

Sensitivity analysis of point and parametric pedotransfer functions for estimating soil water retention

Overall opinion about the revised manuscript

The authors made a great effort to improve the quality of the manuscript. Therefore, the article can be accepted for publication with minor revisions since there is still a limited number of issues that need to be addressed by the authors before publication. These are reported in the specific comments:

Specific comments:

Page 2, line 55: I would suggest: 'Some 97% of water retention PTFs for soils in the tropics'

Page 3, line 92: In the manuscript, the authors start by Figure 3a instead of Figure 1.

Page 4, line 124: An isolated 'T' should be removed.

Page 4, line 146: I would suggest: 'as locally developed PTFs do' instead of '...as well as the locally developed PTFs'.

Page 5, line 161: After some inquiry, it seems that the original formula of the index of Willmott has no '1/n' at the numerator. The authors should check this.

Page 6, line 213: I would suggest 'ME values close to zero'

Page 6, line 224: There is an issue with the order of citing Figures in the text. The authors are jumping from Figure 3b (page 3, line 108) to Figure 6.

Page 6, line 224: The index of agreement results are shown in Table 3 and not in Figure 6.

Page 6, lines 228-229: This paragraph should not be isolated.

Page 7, line 258: Figure 4 illustrates the RMSE values (see the next sentence) and not the improvement of estimation of PTFs after textural grouping.

Page 8, line 279: RMSE 0.030 cm³ cm⁻³

Page 8, line 280: 'J' should be replaced by ')

Page 8, line 295: I would suggest: '...increasing accuracy in PTFs at -33 kPa after fixing the clay content.'

Page 8, line 301: '(%)' should be removed.

Page 8, line 304: I am missing something here. What 'they' refer to? Anyhow I would expect that soils in the medium textural class would drain water more quickly than in the very fine and fine classes.

Page 9, lines 316-318: This long sentence should be divided into two separate sentences to make sense.

Page 9, line 319-320: I would suggest: 'The accuracy of quality estimation at -33 kPa in the medium class when fixing the BD for the two PTF approaches...'

Page 9, lines 322-324: I asked the authors to reformulate this sentence and I still do not agree with the rephrasing with regards to Vertisols. Is it really what

Rawls et al. (2003) stated? Vertisols are well-known to be swelling-shrinking soils with high clay content and high water content in wet conditions.

Page 9, line 328: I would remove 'capillary'

Page 9, line 333: The structural information Nguyen et al. (2015) are talking about is actually related to the more categorical (i.e. qualitative) soil structure information and not to bulk density.

Page 9, line 335: 'is related' instead of 'related'

Page 9, line 349: 'soils' instead of 'soil'

Page 10, lines 359-360: of quality estimation 'at -33 kPa' in the medium class?

Page 10, line 360: 'at -33 kPa' should be removed at the end of the corrected sentence (see previous comment).

Page 10, line 375: 'Revista Brasileira de Ciencia do Solo' instead of 'Brazilian Journal of Soil Science'.

Page 10, lines 378-379: The names of the authors should not be in full capital letters.

Page 17, line 586: Commas should be replaced by points in Figures 1, 2, 4, 5 and 6.

Page 17, lines 592-596: Figure 3. Ideally, the two textural triangles should be of the same shape to allow a direct comparison.

Reviewer #2:

p.3: BD, OM, PSD should be defined at their first us

p.5: Equation (6) is still *wrong*: it does not have the term $1/n$. Does this modification affect the results?

p.5: better link equation (7) and (8): they are just presented without any note

line 335: most insignificant -> less significant

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