

Interactive comment on “Disaggregating a Regional Extent Digital Soil Map using Bayesian Area-to-Point Regression Kriging for Farm-Scale Soil Carbon Assessment” by Sanjeewani Nimalka Somarathna Pallegedara Dewage et al.

Anonymous Referee #2

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The manuscript is well-written and follows up from earlier work of Malone et al. 2017 on disaggregation of coarse scale SOC maps. This is particular important for facilitating management at the field/farm scale. Although I am not a geostatistical expert, the data analysis is sound and the results are convincing, although not much different from the ones obtained by the ‘dissever’ approach. Lines 19-20 Is not there a verb missing in the sentence starting with ‘Disaggregating’ ? Line 21 Define ‘DSM’ at first time use. Line 52 I appreciate that you try to use the original meaning of scale ‘large’ and ‘small’, but the word ‘or’ might create confusion. How about replacing ‘or’ by ‘i.e.’? Line 53 ..into

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two categories... Line 62 Please rephrase this sentence and break it up. e.g. They demonstrated that a Gaussian process model can be used as a novel image fusion technique. They used images from unmanned aerial vehicle flown over agricultural fields for panchromatic sharpening of low-resolution satellite images.

Line 65 Avoid using ‘approach’ twice in one sentence. Please rephrase line 74 are not there some commas missing? Line 79 ..and also ancillary covariates such as the ‘scorpan factors’ (McBratney et al., 2003; Kerry et al., 2012). Line 83 ...underlying.. Line 89 ..soil organic carbon (SOC^o maps.. SOC is arguably... Line 236 ...approach... Line 264 Specify the manufacturer and the country for the Variomax. Did you check the samples for inorganic carbon (carbonates)? Line 285 Has ‘LMM’ been defined before? Avoid using ‘model’ twice in one sentence. Line 351 The MSE has units.

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