

Interactive comment on “Depth-to-Bedrock Map of China at a Spatial Resolution of 100 Meters” by Fapeng Yan et al.

Anonymous Referee #3

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This study provides an important DTB data of China. However, there are many contents which were not clearly illustrated, such as the sampling way of the observations, the generation of pseudo points, etc. The introduction is not straightforward. According to the demonstration in the introduction, the innovation is the resolution of the DTB data? What is the basis of the ensemble method of random forest and gradient boosting tree? The authors need to try to explain the relationships of DTB and those important covariates, that is why those covariates play an important role in the prediction.

Line 146-147, does this mean that one location has multiple observations?

Line 149-154, this additive sampling is not clearly illustrated

Line 172, so the authors demonstrated the uncertainties, but is there a way to deal with

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these uncertainties.

Line 174-185, this part is not clear.

Line 206, how do you know the credibility of those “Points”? And I’m not sure how did the authors get those points from existing materials and previous studies.

224: what is the data source for parent material data?

Section 2.4, what do you mean by fitting the prediction models based on the regression matrix?

Line 267, which covariates were removed and what is the removing rule?

Line 332, the uncertainty map was calculated based on quantile regression forests, therefore is not the uncertainty of the DTB map generated by the resemble method.

Line 352, how did authors obtain the RMSE and ME results for the results of Pelletier et al., and Shangguan et al.? I mean what were the validation points.

Line 367-371, these contents were already illustrated in the previous sections.

Section 5.2, all these errors make the study unreliable, do the authors have any suggestions for reducing or dealing with these errors?

The publication year of “Shangguan, W., Hengl, T., Jesus, J. S. M. d., and Dai, Y.: Mapping the global depth to bedrock for land surface modeling, *Advances in Modeling Earth Systems*, 9, 65-88, 2016.” is wrong.

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