Response to reviewer 3

Many thanks for your valuable comments and suggestions, which have led to significant improvement of this paper (expressed in **Acknowledgements**). We took it seriously, and we have carefully revised the paper over the past four days. In the following, we would detail the changes we have made on the paper.

Specific comments

1. Comments: *Abbreviations in some figures i.e., Fig 10 and Fig 11 are missing.*

Answers: Many thanks for your suggestion. We have checked all the tables and figures. The abbreviations has been added as follows:

L356-361:

"**Figure 7**. The RPD of soil Cu estimation model when two parts of the spectra were pretreated. Figure (a) denotes that the middle and right parts were pretreated. Figure (b) denotes that the left and right parts were pretreated. Figure (c) denotes that the left and middle parts were pretreated. L, M, and R denote the left, middle, and right parts of the spectra, respectively. MC denotes mean centering. SG denotes Savitzky–Golay smoothing. FD denotes first derivative. Lg denotes log(1/R). MSC denotes multiplicative scatter correction. SNV denotes standard normal variate."

L363-370:

"**Figure 8**. The change of the RPD when two parts of spectra were pretreated. The ΔRPD is calculated by subtracting the RPD of two-part pretreatment (as shows in Figure 7) from the RPD of the entire spectra pretreatment (traditional pretreatment). The subtraction can be performed along both the Y and X axes. In other words, subtracting Figure 7a along the Y-axis results in Figure8a, while subtracting along the X-axis produced Figure 8b. Figure 8a, 8c and 8e are de-rived from the Y-axis. Figure 8b, 8d and 8f are obtained from the X-axis. MC denotes mean centering. SG denotes Savitzky–Golay smoothing. FD denotes first derivative. Lg denotes log(1/R). MSC denotes multiplicative scatter correction. SNV denotes standard normal variate."

L411-415:

"**Figure 10**. The RPD of soil Cu estimation model when three parts of the soil spectra were pre-treated. Figure (a), (b), (c), (d), (e), (f) denotes that the left part was pretreated by MC, SG, FD, Lg, MSC, and SNV, respectively. Then the middle and right parts were pretreated. MC denotes mean centering. SG denotes Savitzky–Golay smoothing. FD denotes first derivative. Lg denotes log(1/R). MSC denotes multiplicative scatter correction. SNV denotes standard normal variate."

L417-425:

"**Figure 11**. The change of the RPD when three parts of spectra were pretreated. ΔRPD is calculated by subtracting the RPD of three-part pretreatment (as shown in Figure 10) from that of the entire spectra pretreatment (traditional pretreatment). The subtraction can be performed along the left, middle, and right dimensions. In other words, subtracting Figure 10 along the left dimension results in Figure 11a, 11d, 11g, 11j, 11m, and 11p. Similarly, subtracting Figure 10 along the middle dimension results in Figure 11b, 11e, 11h, 11k, 11n, and 11q. Subtracting Figure 10 along the right dimension results in Figure 11c, 11f, 11i, 11l, 11o, and 11r. MC

denotes mean centering. SG denotes Savitzky–Golay smoothing. FD denotes first derivative. Lg denotes log(1/R). MSC denotes multiplicative scatter correction. SNV denotes standard normal variate."

L553-557:

"**Table 4**. Note: L−M−R denotes the pretreatment that is applied to the left, middle and right parts of spectra, respectively. The value like 1.96 denotes the max RPD of Cu estimation models. No denotes the raw spectra was used without any pretreatment on this part of spectra. SG denotes Savitzky–Golay smoothing. FD denotes first derivative. Lg denotes log(1/R). MSC denotes multiplicative scatter correction. SNV denotes standard normal variate."