1 **Supplementary Material to paper 'Compositional balance should be considered**

2 **in soil particle-size fractions mapping using hybrid interpolators'**

3 **Mo Zhang, Wenjiao Shi**

5 This supplementary material consists of details of statistical chart and prediction results

6 in the paper and in the following 3 sections. **Section S1** is the precedence table of model

7 performance in order to define which choices of ILR balance is the best. **Section S2**

8 shows the distribution and their relative values of soil sampling points. **Section S3**

9 includes the fitted biplots using random sampling test.

Supplementary Material Section S1 The precedence table of model performance

11   **Table S1.1** Precedence table of model performance. SUM1 is the sum of ME for each model, SUM2 is the sum of RMSE for each model, SUM3

12   is the sum of ME, RMSE and AD for each model, SUM4 is the sum of ME for GLM (GLMRK included) and RF (RFRK included), SUM5 is the

13   sum of RMSE for GLM (GLMRK included) and RF (RFRK included), SUM6 is the sum of all indicator vlaues.

	GLM			GLMRK			RF			RFRK		
	SBP1	SBP2	SBP3	SBP1	SBP2	SBP3	SBP1	SBP2	SBP3	SBP1	SBP2	SBP3
ME	3	1	2	3	2	1	1	2	2	1	2	3
	1	2	3	1	2	3	1	3	2	1	2	3
	1	2	3	1	2	3	1	3	2	1	2	3
SUM1	**5**	**5**	**8**	**5**	**6**	**7**	**3**	**8**	**6**	**3**	**6**	**9**
RMSE	1	3	2	1	3	2	1	1	2	3	2	1
	2	3	1	1	3	2	1	2	3	3	2	1
	3	2	1	3	1	2	1	2	1	2	1	1
SUM2	**6**	**8**	**4**	**5**	**7**	**6**	**3**	**5**	**6**	**8**	**5**	**1**
AD	**2**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**1**	**1**
SUM3	**13**	**15**	**13**	**11**	**14**	**14**	**7**	**14**	**13**	**13**	**12**	**11**
	ME			RMSE			ME			RMSE		
SUM4	**10**	**11**	**15**				**6**	**14**	**15**			
SUM5				**11**	**15**	**10**				**11**	**10**	**7**
SUM6	**44**	**55**	**51**									

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16 **Supplementary Material**

17 **Section S2 The distribution and their relative values of soil sampling points**

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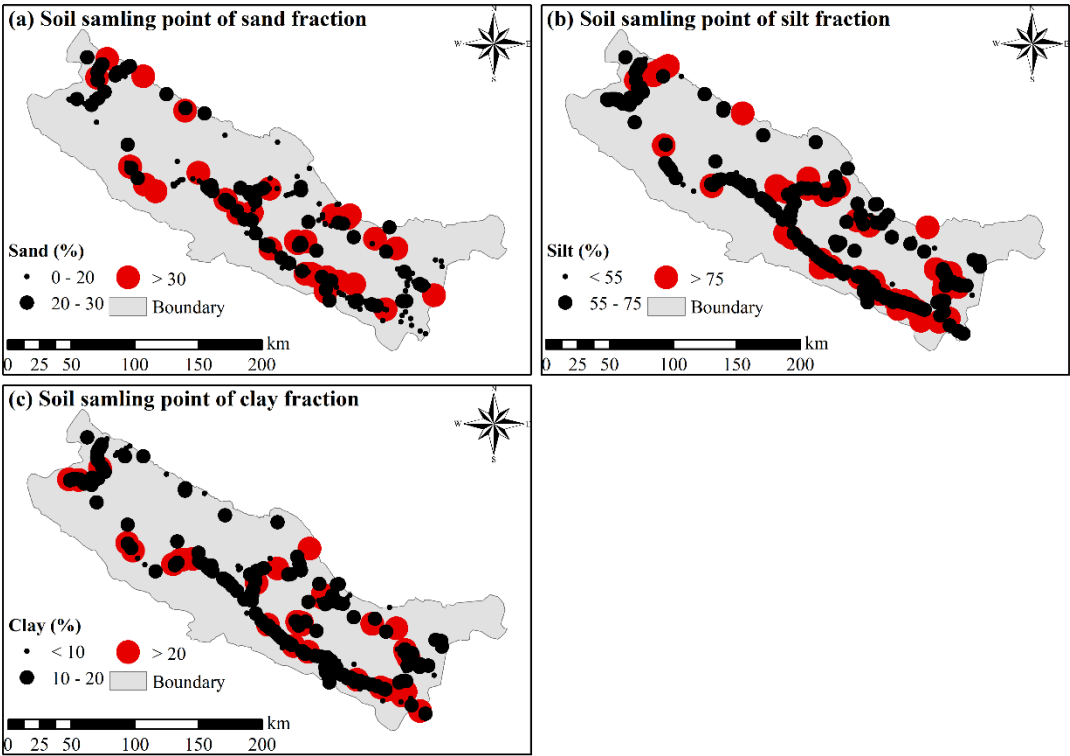
20 **Figure. S2.1** Distribution and relative values of soil sampling points for (a) sand, (b)

21 silt and (c) clay fractions.

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Section S3 The fitted biplots using random sampling test

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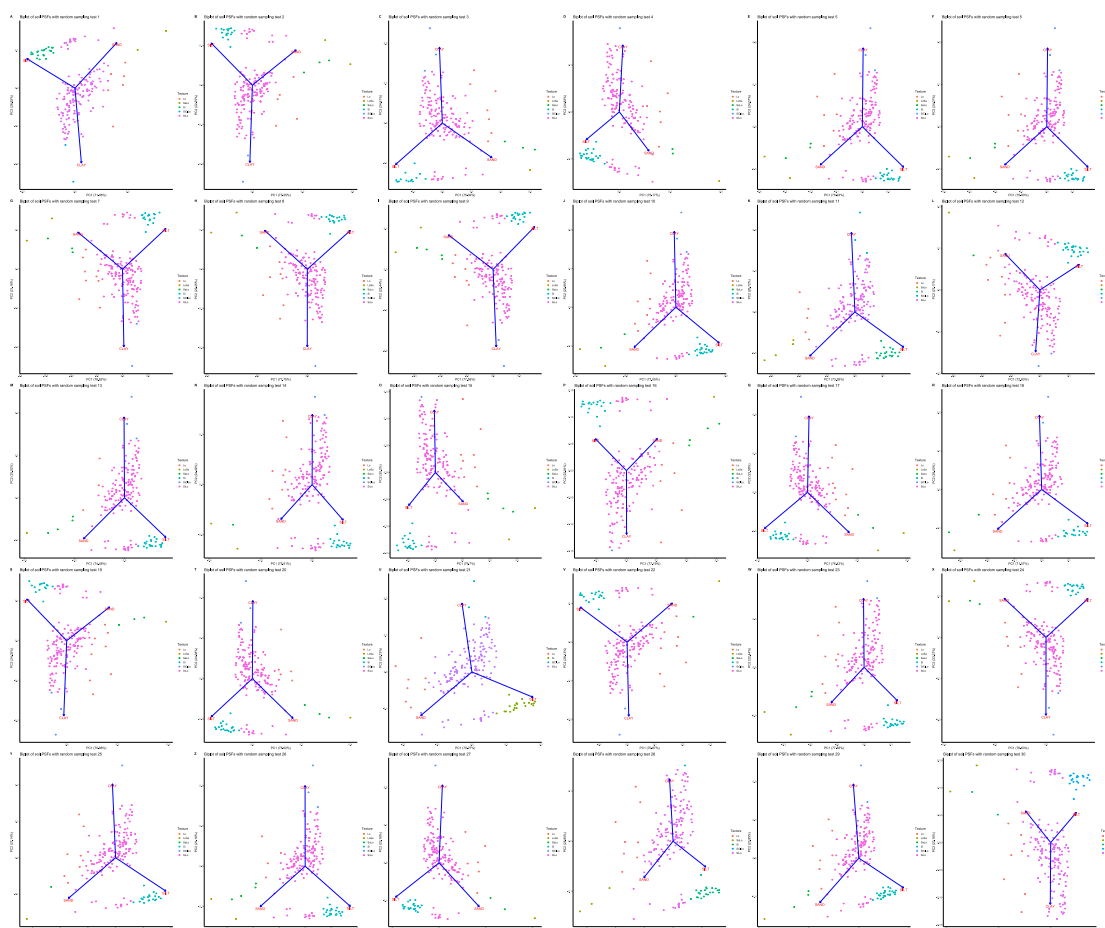
Figure. S3.1 Biplots of soil PSFs data using random sampling test (30 times)

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