

Ecography

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**Supplementary material**

## Appendix 1

**Figure A1.** Moran's Index of model residuals of overall plot-pairs for the  $\beta$ -diversity of trees and shrubs in China's mountains.

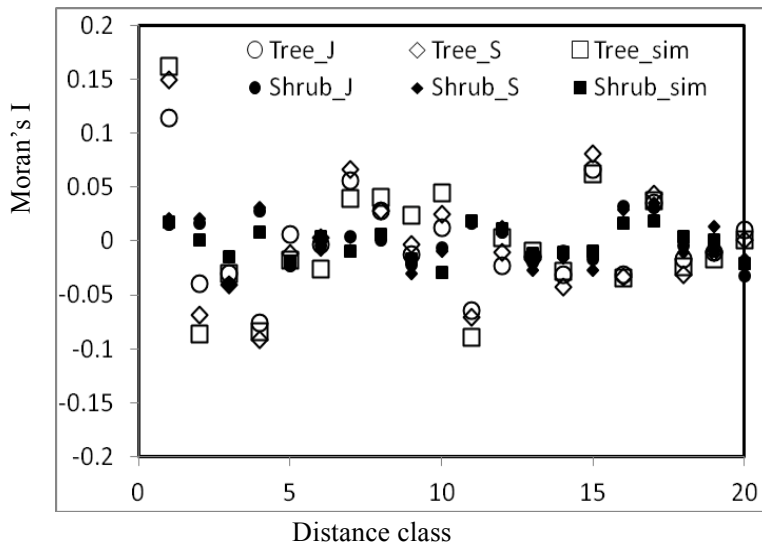


Table A1 Summary of general information for mountains included in this study.

Mountain	Latitude	Longitude	Altitudinal range (min~max, meters)	No. transects	No. plots	Mean tree $\beta_s$ (sd)	Mean tree $\beta_j$ (sd)	Mean tree $\beta_{sim}$ (sd)	Mean shrub $\beta_s$ (sd)	Mean shrub $\beta_j$ (sd)	Mean shrub $\beta_{sim}$ (sd)
Xishuangbanna*	21.9	101.3	590 (660~1250)	1	6	0.87 (0.09)	0.87 (0.09)	0.76 (0.15)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Mt. Bozhushan	23.4	103.9	685 (2312~2997)	1	11	0.68 (0.07)	0.68 (0.09)	0.37 (0.18)	0.72 (0.10)	0.72 (0.18)	0.48 (0.30)
Mt. Ailao	24.3	101.2	690 (1830~2520)	1	8	0.85 (0.07)	0.85 (0.09)	0.70 (0.17)	0.83 (0.08)	0.82 (0.12)	0.54 (0.34)
Mt. Wuliang	24.5	100.7	1411 (1389~2800)	1	16	0.77 (0.09)	0.78 (0.13)	0.61 (0.19)	0.75 (0.13)	0.78 (0.18)	0.54 (0.25)
Mt. Xiaoheishan	24.8	98.8	530 (1840~2370)	1	8	0.78 (0.09)	0.79 (0.13)	0.58 (0.17)	0.80 (0.15)	0.81 (0.16)	0.56 (0.34)
Mt. Mangshan	25.0	112.9	1285 (610~1895)	1	19	0.72 (0.11)	0.72 (0.13)	0.52 (0.14)	0.91 (0.06)	0.91 (0.08)	0.70 (0.29)
Mt. Dupangling	25.5	110.4	1239 (617~1856)	1	8	0.76 (0.07)	0.76 (0.08)	0.60 (0.09)	0.96 (0.05)	0.94 (0.11)	0.84 (0.32)
Mt. Maoer	25.9	110.5	1447 (660~2107)	1	17	0.75 (0.05)	0.75 (0.08)	0.55 (0.10)	0.92 (0.03)	0.91 (0.05)	0.77 (0.12)
Mt. Bamian	26.4	114.0	1410 (650~2060)	1	12	0.73 (0.05)	0.75 (0.06)	0.54 (0.09)	0.91 (0.09)	0.92 (0.09)	0.74 (0.29)
Mt. Yulong	27.1	100.2	1468 (2722~4190)	1	13	0.60 (0.22)	0.61 (0.24)	0.37 (0.24)	0.77 (0.14)	0.77 (0.17)	0.50 (0.38)
Mt. Gongshan	27.8	98.5	1605 (2025~3630)	1	12	0.79 (0.10)	0.78 (0.13)	0.45 (0.21)	0.95 (0.07)	0.95 (0.08)	0.90 (0.17)
Mt. Wuyi	27.8	117.8	1550 (600~2150)	3	53	0.74 (0.08)	0.74 (0.11)	0.49 (0.18)	0.91 (0.08)	0.92 (0.09)	0.77 (0.21)
Mt. Jinfo	29.1	107.2	1590 (650~2240)	1	33	0.80 (0.07)	0.79 (0.09)	0.61 (0.14)	0.85 (0.06)	0.85 (0.08)	0.69 (0.14)
Mt. Nanjiabawa	29.3	95.4	3900 (750~4650)	2	33	0.70 (0.17)	0.71 (0.20)	0.50 (0.29)	0.81 (0.09)	0.81 (0.11)	0.63 (0.20)
Mt. Gongga	29.6	102.0	3300 (1200~4500)	1	50	0.67 (0.18)	0.67 (0.20)	0.44 (0.26)	0.71 (0.19)	0.71 (0.23)	0.47 (0.34)
Mt. Guniujiang	30.0	117.5	940 (460~1400)	1	19	0.69 (0.07)	0.69 (0.09)	0.49 (0.12)	0.80 (0.08)	0.80 (0.09)	0.61 (0.18)
Mt. Xitianmu	30.3	119.4	885 (610~1495)	1	10	0.78 (0.10)	0.78 (0.13)	0.61 (0.15)	0.96 (0.03)	0.96 (0.05)	0.82 (0.33)
Mt. Dabie	31.1	116.2	1590 (160~1750)	1	28	0.71 (0.10)	0.71 (0.12)	0.50 (0.18)	0.86 (0.07)	0.86 (0.09)	0.63 (0.20)
Mt. Shennongjia	31.2	110.6	2450 (650~3100)	2	69	0.74 (0.17)	0.74 (0.20)	0.55 (0.28)	0.82 (0.18)	0.83 (0.18)	0.60 (0.30)

Mt. Jigong	31.9	114.1	507 (198~705)	1	13	0.74 (0.14)	0.75 (0.16)	0.59 (0.19)	0.88 (0.05)	0.88 (0.07)	0.77 (0.13)
Mt. Michang	32.6	106.8	1800 (700~2500)	1	37	0.72 (0.13)	0.72 (0.16)	0.50 (0.26)	0.81 (0.08)	0.81 (0.10)	0.60 (0.18)
Mt. Motianling	32.8	104.9	2730 (670~3400)	1	25	0.72 (0.18)	0.71 (0.22)	0.47 (0.31)	0.75 (0.13)	0.74 (0.15)	0.53 (0.20)
Mt. Baotianman	33.5	111.9	737 (1087~1824)	1	19	0.68 (0.08)	0.69 (0.12)	0.37 (0.22)	0.83 (0.08)	0.82 (0.09)	0.62 (0.18)
Mt. Xiaolongshan	33.7	106.3	1740 (700~2440)	3	38	0.82 (0.10)	0.82 (0.13)	0.61 (0.23)	0.86 (0.09)	0.86 (0.12)	0.71 (0.23)
Mt. Niubeiliang	33.9	109.0	1370 (1430~2800)	2	49	0.57 (0.11)	0.57 (0.14)	0.27 (0.15)	0.71 (0.10)	0.71 (0.13)	0.51 (0.18)
Mt. Taibai	34.0	107.7	2450 (1200~3650)	2	75	0.53 (0.21)	0.53 (0.23)	0.24 (0.21)	0.71 (0.12)	0.71 (0.14)	0.51 (0.17)
Mt. Zhongtiao	35.3	112.1	720 (960~1680)	3	16	0.65 (0.15)	0.66 (0.16)	0.43 (0.19)	0.83 (0.09)	0.82 (0.12)	0.67 (0.20)
Mt. Kunlun	37.8	76.1	645 (2773~3418)	2	27	0.33 (0.23)	0.35 (0.28)	0.08 (0.19)	0.69 (0.20)	0.69 (0.24)	0.38 (0.42)
Mt. Pangquangou	37.8	111.5	1185 (1491~2676)	1	24	0.64 (0.21)	0.64 (0.24)	0.37 (0.24)	0.78 (0.13)	0.78 (0.15)	0.50 (0.28)
Mt. Helan*	38.8	105.9	2166 (1236~3402)	1	7	0.66 (0.10)	0.67 (0.10)	0.20 (0.27)	0.87 (0.15)	0.85 (0.26)	0.76 (0.30)
Mt. Xiaowutai	39.9	115.0	1600 (1250~2850)	1	36	0.44 (0.25)	0.45 (0.27)	0.21 (0.29)	0.82 (0.19)	0.81 (0.27)	0.64 (0.43)
Mt. Bailongtan*	40.5	117.1	40 (278~318)	1	9	0.45 (0.15)	0.46 (0.20)	0.24 (0.23)	0.59 (0.16)	0.60 (0.23)	0.38 (0.21)
Mt. Songshan	40.5	115.8	876 (592~1468)	1	14	0.76 (0.24)	0.76 (0.33)	0.62 (0.45)	0.84 (0.11)	0.83 (0.15)	0.65 (0.28)
Mt. Wuling	40.6	117.5	1015 (1070~2085)	1	18	0.47 (0.22)	0.47 (0.24)	0.20 (0.26)	0.64 (0.21)	0.67 (0.24)	0.48 (0.30)
Mt. Labagoumen	41.0	116.5	819 (876~1695)	1	20	0.67 (0.10)	0.66 (0.14)	0.31 (0.26)	0.84 (0.07)	0.84 (0.11)	0.69 (0.20)
Mt. Laotudingzi	41.3	124.9	686 (534~1220)	1	15	0.75 (0.12)	0.74 (0.14)	0.56 (0.20)	0.79 (0.08)	0.80 (0.09)	0.62 (0.14)
Mt. Changbai	42.3	128.1	1415 (530~1945)	2	65	0.47 (0.17)	0.48 (0.20)	0.21 (0.20)	0.83 (0.11)	0.82 (0.12)	0.54 (0.34)
Mt. Tianshan	43.2	85.3	1296 (1730~3026)	4	49	0.38 (0.35)	0.39 (0.42)	0.26 (0.44)	0.68 (0.30)	0.70 (0.31)	0.49 (0.44)
Mt. Dongtianshan	43.3	93.7	595 (2210~2805)	1	8	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.60 (0.55)	0.50 (0.71)	0.50 (0.71)
Yili Valley	44.2	81.6	534 (910~1544)	3	69	0.35 (0.20)	0.33 (0.23)	0.09 (0.19)	0.65 (0.23)	0.65 (0.27)	0.40 (0.40)

Mt. Datudingzi	44.4	128.2	554 (970~1524)	1	8	0.44 (0.25)	0.41 (0.29)	0.13 (0.16)	0.92 (0.07)	0.91 (0.11)	0.80 (0.29)
Mt. Maoershan*	45.3	128.0	69 (351~420)	1	6	0.53 (0.15)	0.60 (0.14)	0.40 (0.15)	0.93 (0.08)	0.93 (0.10)	0.50 (0.71)
Liangshui Reserve*	47.2	128.9	122 (344~466)	1	13	0.48 (0.09)	0.48 (0.16)	0.26 (0.17)	0.90 (0.09)	0.90 (0.10)	0.49 (0.40)
Mt. Altai	47.8	88.7	1568 (970~2538)	4	52	0.27 (0.22)	0.26 (0.25)	0.05 (0.14)	0.66 (0.27)	0.65 (0.34)	0.49 (0.44)
Genhe Reserve*	50.9	121.5	24 (815~839)	1	6	0.20 (0.21)	0.25 (0.29)	0.00 (0.00)	0.64 (0.16)	0.64 (0.20)	0.30 (0.42)
Huzhong Reserve	51.7	123.1	513 (701~1214)	1	10	0.37 (0.25)	0.38 (0.31)	0.00 (0.00)	0.79 (0.13)	0.79 (0.16)	0.54 (0.34)
Overall	21.9~51.7	76.1~128.9	4490 (160~4650)	66	1153	0.59 (0.25)	0.59 (0.27)	0.36 (0.29)	0.79 (0.18)	0.79 (0.20)	0.59 (0.24)

\*excluded in comparing altitudinal gradient of  $\beta$ -diversity due to very short altitudinal range or limited number of plots.