Supplemental informations-Tables

SI-Table A1. LOCATION OF OBSERVATION SITES AND ATTITUDE OF STRETCHING LINEATION

Site No.	Location		Foliation	Lineation
	Lat (°N)	Long (°E)	（Dip Azimuth°∠Dip°）	（Trend°∠ Plunge°）
STRETCHING LINEATION MEASURED FROM THE NE EDGE OF THE AILAO SHAN				
Majie-Mosha section				
P1	23°39.524'	101°50.920'	70∠69	147∠4
				338°∠2°
P3	23°46.511'	101°44.246'	65∠50	**340°∠9°**
				310°∠19°
P4	24°06.113'	101°30.412'	90∠51	160∠23
				130°∠15°
P5	24°15.503'	101°23.832'	65∠86	155∠6
P6	24°16.660'	101°22.614'	81∠62	158∠14
P7	24°20.688'	101°19.780'	65∠80	150∠16
P8	24°21.856'	101°18.715'	240∠65	**310∠9**
P9	24°22.269'	101°18.344'	51∠74	**341∠27**
				340∠14
P10	24°24.959'	101°16.149'	74∠65	150∠9
P11	24°26.052'	101°15.617'	40∠59	**317∠9**
P12	24°27.997'	101°13.792'	51∠56	125∠16
P13	24°30885'	101°11.595'	60∠47	**334∠6**
P14	24°33.237'	101°09.425'	73∠73	**349∠12**
P15	24°33.661'	101°08.916'	220∠73	**310∠5**
				344∠14
P16	24°34.223'	101°08.552'	60∠61	**324∠3**
P17	24°35.263'	101°07.827'	50∠48	**325∠5**
P18	24°36.146'	101°06.534'	53∠60	**331∠9**
			60∠79	**340∠11**
P19	24°36.877'	101°06.283'	53∠55	**328∠5**
P20	23°58.248'	101°36.779'	61∠71	**330∠9**
P49	24°52.768'	100°50.858'	244∠62	**275∠41**
			230∠51	**321∠41**
P50	24°59.091'	100°43.794'	56∠37	107∠14
Mosha-Honghe section				
P21	23°35.113'	101°57.605'	62∠59	**340∠8**
			62∠62	**321∠9**
				326∠7
P22	23°31.116'	101°01.987'	44∠50	130∠8
				116∠10

P28	23°58.248′	102°14.680′	328∠15	**266∠7**
				270∠5
P29	23°19.616′	102°30.465′	47∠57	97∠5
P30	23°22.388′	102°20.639′	59∠69	125∠20
P31	23°22.775′	102°20.026′	47∠72	120∠24
			45∠60	160∠27

Honghe-Manhao section

P32	23°19.513′	102°31.166′	220∠35	**297∠14**
				297°∠7°
P33	23°17.724′	102°37.395′	185∠69	115∠9
P34	23°17.113′	102°39.910′	187∠46	**270∠11**
			5∠62	**303∠21**
P35	23°15.911′	102°44.640′	210∠80	**310∠9**
P37	23°13.515′	102°49.200′	13∠70	**301∠11**
P38	23°13.766′	102°49.091′	35∠69	**325∠20**
			45∠80	**333∠24**
P39	23°12.633′	102°51.491′	231∠44	**345∠21**
			300∠11	**350∠45**
P40	23°12.169′	102°53.446′	24∠80	**290∠6**
P41	23°11.796′	102°54.041′	206∠48	**300∠5**
			215∠68	**309∠16**
P42	23°10.188′	102°57.291′	219∠56	**305∠13**
			213∠65	**300∠13**
P43	23°09.739′	102°57.770′	39∠61	130∠16
				341°∠7°
P44	23°07.698′	103°00.972′	227∠55	**315∠4**
			52∠66	**278°∠3°**
P46	23°01.066′	103°19.246′	45∠65	140∠25

STRETCHING LINEATION MEASURED FROM ROAD-SECTIONS ACROSS THE AILAO SHAN

Gasa-Zhenyuan section

1709-01	24°05.922′	101°30.913′	69∠52	125∠26
				115∠39
1709-02	24°05.566′	101°31.264′	39°∠52	128∠10
				126∠18
1709-03	24°05.038′	101°31.510′	55∠51	**289∠12**
				300∠10
1709-04	24°04.850′	101°31.361′	73∠56	**338∠16**
				330∠6
			54∠65	**331∠6**
				340∠9
1709-05	24°04.352′	101°31.741′	57∠61	**316∠13**
				303∠12
1709-06	24°04.003′	101°32.071′	60∠52	**320∠3**

				315∠8
1709-07	24°03.481′	101°31.729′	75∠57	155∠26
				158∠24
1709-08	24°03.184′	101°31.692′	64∠46	**297∠4**
				286∠9
1709-09	24°02.562′	101°31.676′	65∠54	**335∠16**
				320∠10
1709-10	24°01.882′	101°32.182′	78∠64	**318∠14**
				298∠16
1709-11	24°00.189′	101°32.446′	58∠59	140∠1
				145∠4
1709-12	23°59.118′	101°32.627′	50∠65	**320∠5**
				321∠1
			53∠49	**326∠7**
				329∠7
1709-13	23°58.684′	101°32.506′	65∠78	**324∠5**
				330∠10
1709-14	23°58.554′	101°32.191′	54∠58	**334∠11**
				315∠3
1709-15	23°58.385′	101°31.574′	63∠72	**349∠6**
				349∠4
1709-16	23°57.976′	101°31.882′	54∠42	**324∠4**
				347∠6
1709-17	24°01.400′	101°32.617′	43∠64	**330∠13**
				339∠13
1709-18	23°53.527′	101°39.921′	65∠47	**310∠4**
				295∠6
			69∠59	**322∠8**
				300∠10

Gasa-Mojiang section

1709-19	23°46.772′	101°44.516′	60∠56	**330∠5**
				332∠4
1709-20	23°46.560′	101°44.404′	67∠56	**321∠4**
				310∠9
			67∠59	**326∠4**
				336∠7
1709-21	23°46.453′	101°44.084′	70∠50	**351∠3**
				340∠10
1709-22	23°46.043′	101°42.678′	64∠84	**347∠14**
				333∠14
1709-23	23°45.994′	101°41.802′	75∠87	**300∠11**
				315∠8
1709-24	23°46.077′	101°41.392′	80∠60	**288∠9**
				296∠10

1709-25	23°45.805′	101°40.826′	80∠61	**335∠9**
				320∠12
1709-26	23°45.573′	101°40.687′	63∠45	150∠3
				154∠6
1709-27	23°45.313′	101°40.562′	76∠74	**275∠6**
				288∠11
1709-29	23°43.586′	101°40.909′	70∠76	159∠3
				140∠12

Yuanjiang-Mojiang section

1709-30	23°34.863′	101°57.211′	20∠81	**294∠16**
				300∠11
1709-31	23°34.193′	101°56.130′	57∠51	**289∠7**
				310∠6
1709-32	23°34.075′	101°56.054′	32∠64	**313∠7**
				316∠9
1709-34	23°34.055′	101°55.369′	35∠75	**315∠6**
				297∠19
1709-35	23°34.042′	101°55.366′	30∠84	121∠21
				126∠12
1709-36	23°33.236′	101°54.987′	66∠88	**331∠13**
				336∠18
1709-37	23°32.851′	101°55.098′	62∠83	**349∠10**
				355∠17
			38∠60	**328∠8**
				329∠12
1709-38	23°32.611′	101°54.912′	34∠75	**320∠8**
				323∠10
1709-39	23°32.149′	101°54.907′	45∠73	131∠20
				133∠14
1709-40	23°31.988′	101°55.042′	44∠82	**326∠19**
				325∠15
1709-41	23°31.083′	101°54.717′	32∠80	122∠14
				135∠19
1709-42	23°31.640′	101°54.427′	32∠86	115∠1
				129∠4

Yuanyang-Lvchun section

1709-44	23°14.134′	102°47.389′	25∠64	**291∠5**
				297∠5
1709-45	23°13.785′	102°46.770′	43∠46	**312∠11**
				323∠6
1709-46	23°13.262′	102°46.034′	38∠16	**341∠4**
				343∠2
1709-47	23°11.633′	102°44.735′	18∠64	**280∠5**
				277∠7

1709-48	23°10.869′	102°43.763′	115∠19	**334∠15**
				320∠12
1709-49	23°10.574′	102°43.532′	145∠38	201∠19
				206∠12
1709-50	23°09.614′	102°42.951′	115∠35	**328∠9**
				333∠10
1709-51	23°08.140′	102°40.575′	104∠14	**304∠8**
				307∠15
1709-52	23°07.464′	102°38.959′	47∠38	129∠8
				130∠10
1709-53	23°07.220′	102°38.689′	160∠40	181∠39
				191∠41
1709-54	23°07.114′	102°38.229′	64∠59	**309∠10**
				305∠14
Manhao-Jinping section				
1709-55	23°00.721′	103°19.220′	29∠66	121∠23
				120∠14
1709-56	23°00.088′	103°19.182′	52∠54	**321∠7**
				339∠3
1709-57	22°59.736′	103°18.638′	226∠39	**289∠2**
				300∠5
			254∠54	**274∠34**
				289∠10
1709-58	22°59.253′	103°18.536′	359∠32	**308∠3**
				320∠1
1709-59	22°59.074′	103°17.894′	199∠49	**317∠4**
				314∠6
1709-60	22°58.301′	103°17.357′	27∠70	**316∠12**
				315∠9
1709-61	22°57.763′	103°17.821′	229∠50	**325∠15**
				310∠10
			226∠44	**325∠11**
				339∠15
1709-62	22°57.248′	103°17.180′	31∠58	85∠54
				100∠45
1709-63	22°56.684′	103°14.819′	207∠55	116∠2
				108∠4
1709-64	22°56.727′	103°13.728′	79∠63	126∠18
				140∠24

Note: All 196 stretching lineation measurements consist of 143 measurements that plunge to NW (bold) and 53 that plunge to SE.

Fisher Vector Distribution

The standard mean vector calculation is conducted by using STEREONET 9.6.1 (by Richard W. Allmendinger). The uncertainty intervals are calculated from the following equation:

$$\cos \delta \alpha_p = 1 - \left(\frac{N-R}{R}\right)\left[\left(\frac{1}{1-p}\right)^{\frac{1}{N-1}} - 1\right]$$

Where p is the probability, N is the number of observations, and R is the resultant vector length. Kappa, κ, the dispersion or concentration factor, is estimated from one of the following caculations:

$$\kappa \approx \left(\frac{N}{(N-R)}\right)\left(1 - \left(\frac{1}{N}\right)\right)^2 \quad for \ N < 16$$

$$\kappa \approx \left(\frac{N-1}{(N-R)}\right) \quad for \ N \geq 16$$

Stereonet 9.5 uses $(N-1)$ following Fisher's original estimation (Fisher *et al.*, 1987; Davis, 2002).

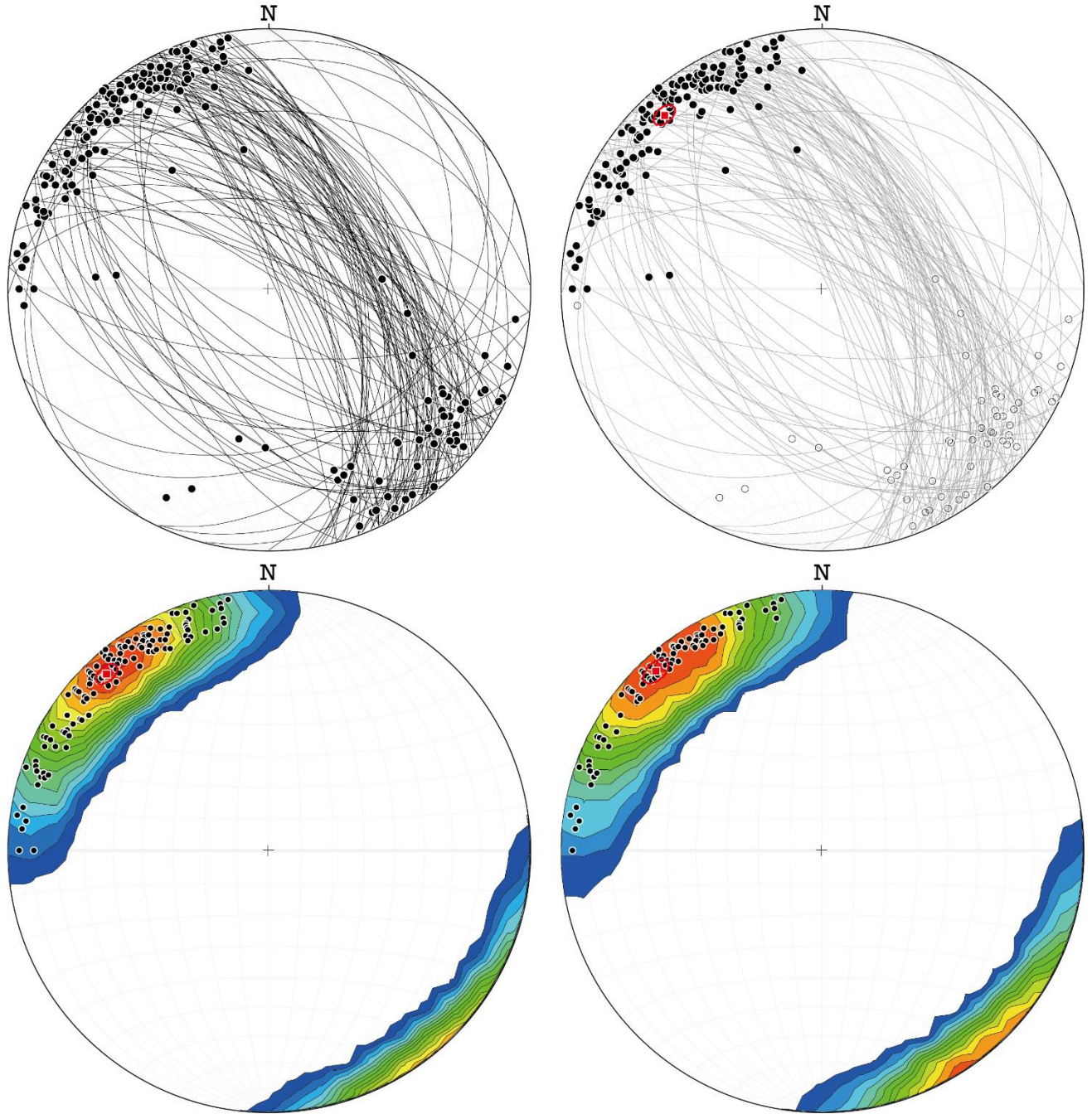All 196 measurements contain 143 that plunge to NW and 53 that plunge to SE.

Figure A1. a: Stereonet plots (Low hemisphere) showing the orientations of all 115 foliation and 196 lineation measurements from the Ailao Shan metamorphic belt. b: Stereonet plots (Low hemisphere) illustrating the orientations of 143 NW-plunge lineations and 53 SE-plunge lineations (hollow). Red circle shows the Fisher Mean Vector of all NW-plunge lineations. c: Kamb contouring and Fisher Mean Vector of 125 NW-plunge lineation less than 15 °. d: Kamb contouring and Fisher Mean Vector of 90 NW-plunge lineation less than 10 °. See Table A2 for Fisher Mean Vector calculation results.

Table A2 FISHER MEAN VECTOR OF LINEATION MEASUREMENTS

Group	Number	Trent (°)	Plunge	α95	α99	κ	Mean length

All NW	143	317.9	10.8	3.0	3.8	16.2	0.9388
Other	53	136.6	18.0	7.2	9.0	8.3	0.8816
NW≤10°	90	317.3	6.8	3.5	4.4	18.8	0.9474
NW≤15°	125	317.6	8.7	3.0	3.7	18.6	0.9468

References

Davis, J.C., 2002, Statistics and data analysis in geology: Hoboken, NJ, John Wiley, 638 p.

Fisher, N.I., Lewis, T.L., and Embleton, B.J., 1987, Statistical analysis of spherical data: Cambridge, Cambridge University Press, 329 p.