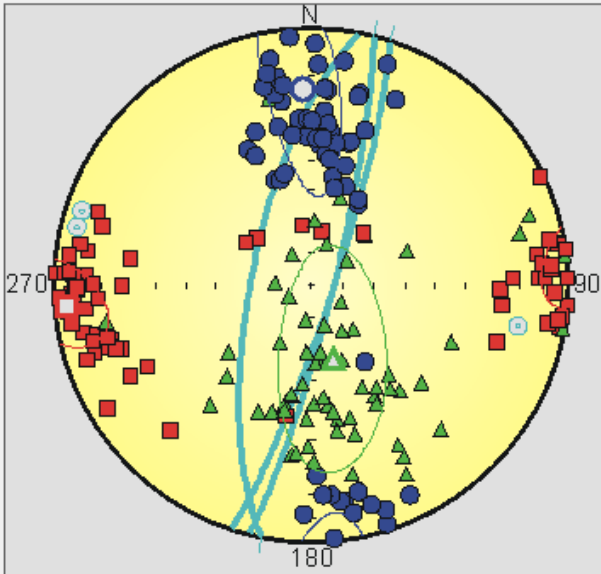


Anisoft5

Complex Treatment of Magnetic Anisotropy Data



Anisoft
Advanced Treatment of Magnetic Anisotropy Data

AGICO

www.agico.com

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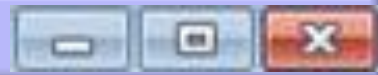
Version: 5.0.02 Beta! Release: 24-Aug-2017



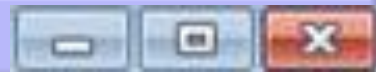
Martin Chadima

AGICO Inc., Brno, Czech Republic
Institute of Geology, ASCR, v.v.i., Prague, Czech Republic

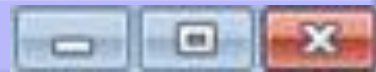




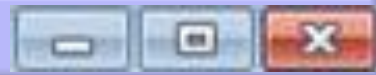
- MS Windows software (WinXP, Win7, Win8, Win10)
- File formats: ***.ams**, long-time-standard *.ran, *.asc and other...
- Graphical data visualization (Stereoplot, XY-plots)
- Data export (*.csv, *.txt, etc...)
- Group statistics (Mean tensor and Jelinek statistics)
- **Editing of Orientation data**
- **Manual data filtering**
- **Histogram**
- **Contour plot**
- Graphics export (Clipboard, *.wmf, *.bmp, ***.tif, *.gif, *.jpg, *.png**)



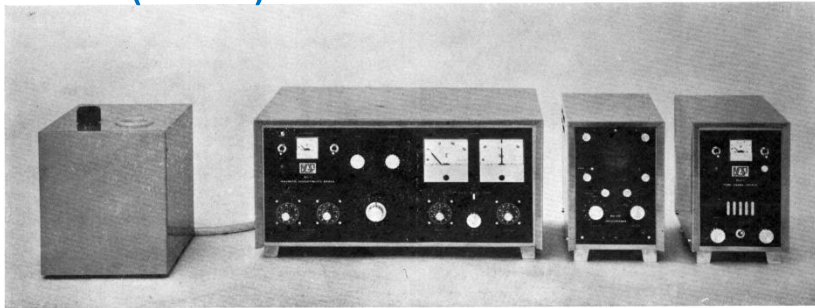
<i>Method</i>	<i>Instrument</i>	<i>Data type</i>	<i>Data acquisition software</i>	<i>Data processing software</i>
Magnetic susceptibility $k, k(H)$	KLY5 MFK1 (KLY1-4)	Scalar	Safyr	Safyr
Anisotropy of magnetic susceptibility <i>AMS</i>		Tensor		Anisoft
Frequency-dependent magnetic susceptibility $k(f)$	MFK1-FA, FB	Scalar		Safyr
Temperature variation of magnetic susceptibility $k(T)$	+ CS Unit	Scalar	Sufyte	Cureval
Magnetic remanence $M, M(H), M(T)$	JR6 (JR1-5)	Vector	Rema	Remasoft



<i>Method</i>	<i>Instrument</i>	<i>Data type</i>	<i>Data acquisition software</i>	<i>Data processing software</i>
Magnetic susceptibility $k, k(H)$	KLY5 MFK1 (KLY1-4)	Scalar	Safyr	Safyr
Anisotropy of magnetic susceptibility <i>AMS</i>		Tensor		Anisoft
Frequency-dependent magnetic susceptibility $k(f)$	MFK1-FA, FB	Scalar		Safyr
Temperature variation of magnetic susceptibility $k(T)$	+ CS Unit	Scalar	Sufyte	Cureval
Magnetic remanence $M, M(H), M(T)$	JR6 (JR1-5)	Vector	Rema	Remasoft



KLY-1 (1967)



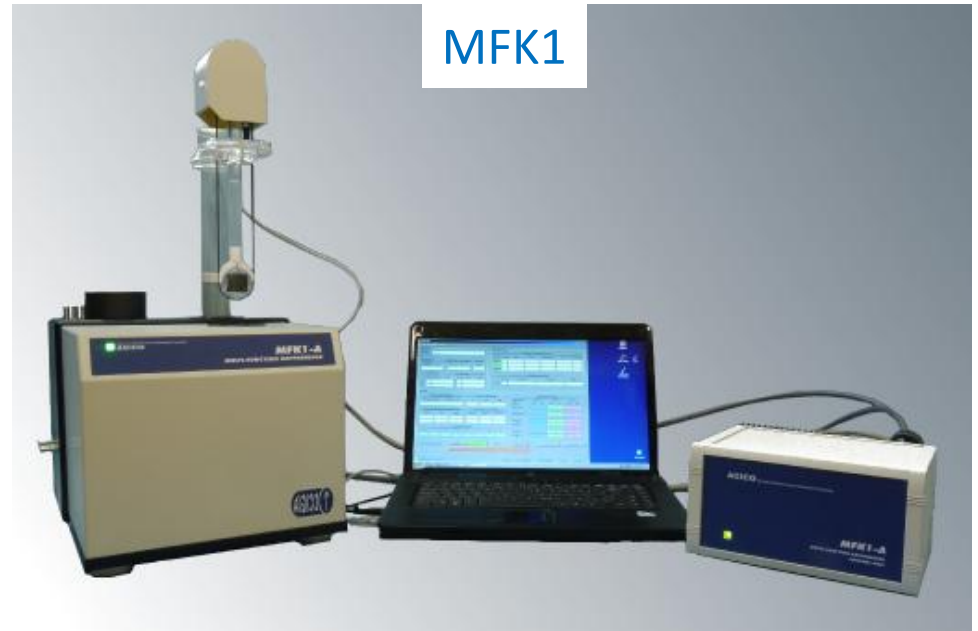
KLY-2

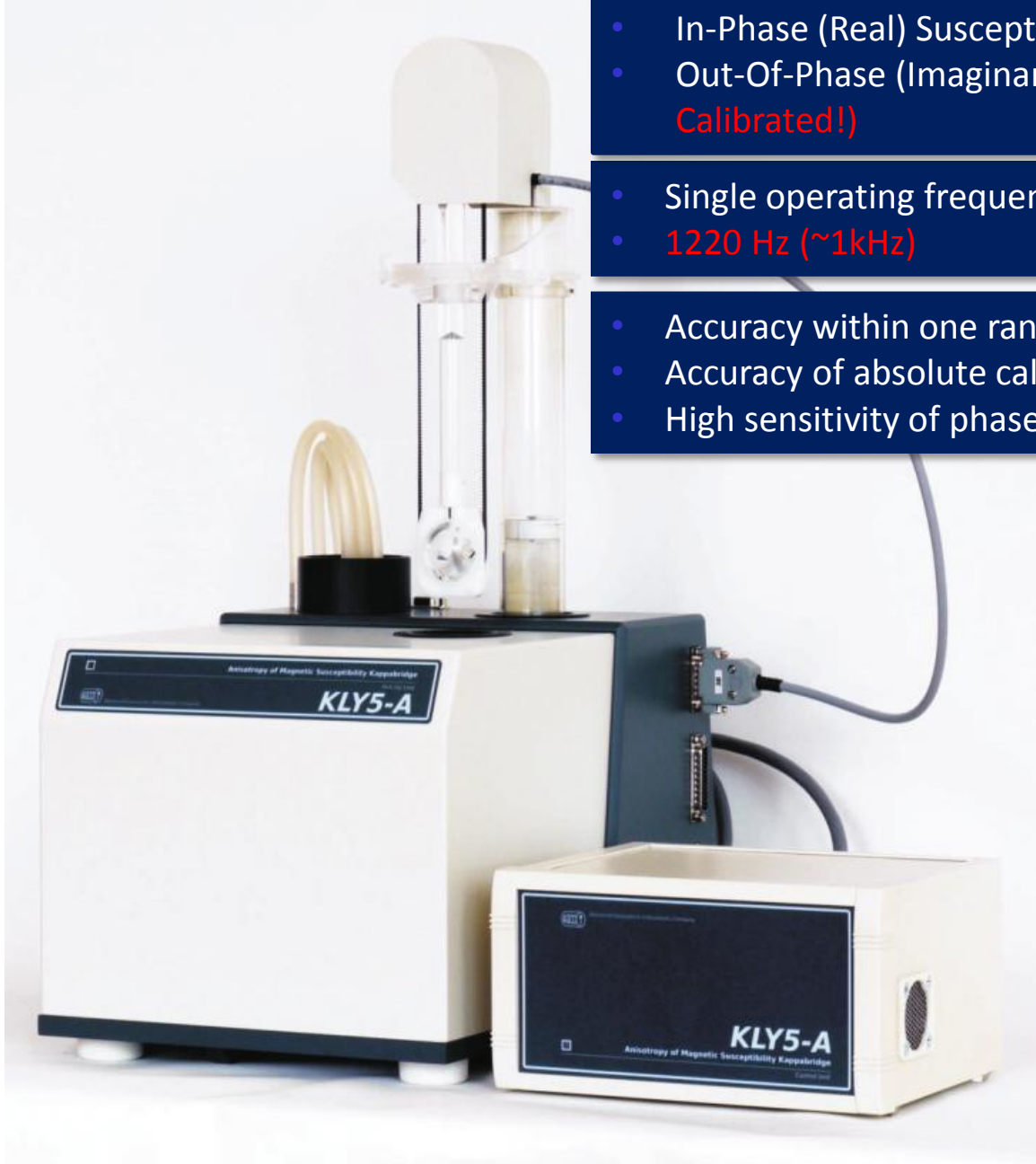


KLY-3 & 4

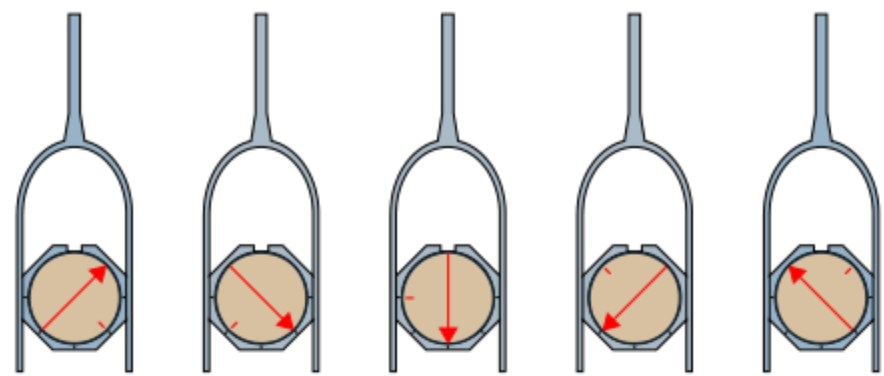


MFK1

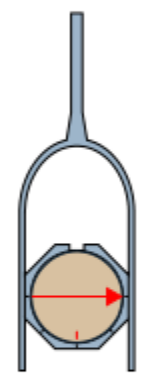




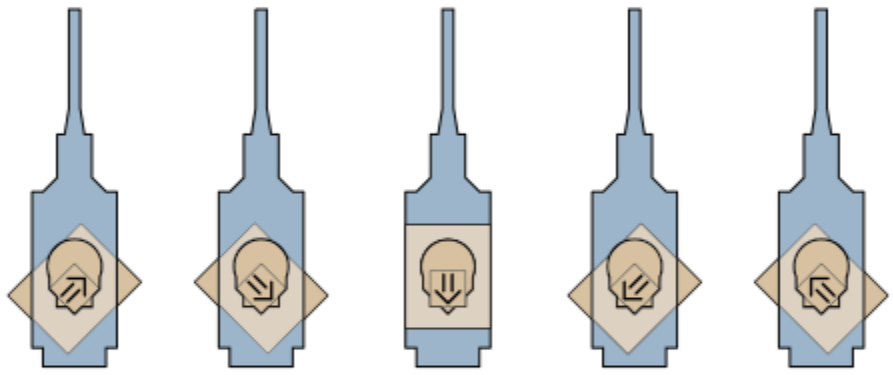
- In-Phase (Real) Susceptibility
- Out-Of-Phase (Imaginary) Susceptibility (**Precise and Calibrated!**)
- Single operating frequency in field range (in peak values)
- **1220 Hz (~1kHz)** **5 - 750 A/m**
- Accuracy within one range: 0.1 %
- Accuracy of absolute calibration: 3.0 %
- High sensitivity of phase determination 0.1



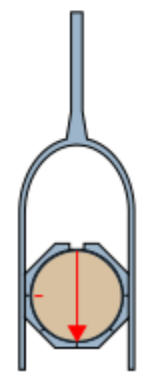
POS 1. POS 2. POS 3. POS 4. POS 5.



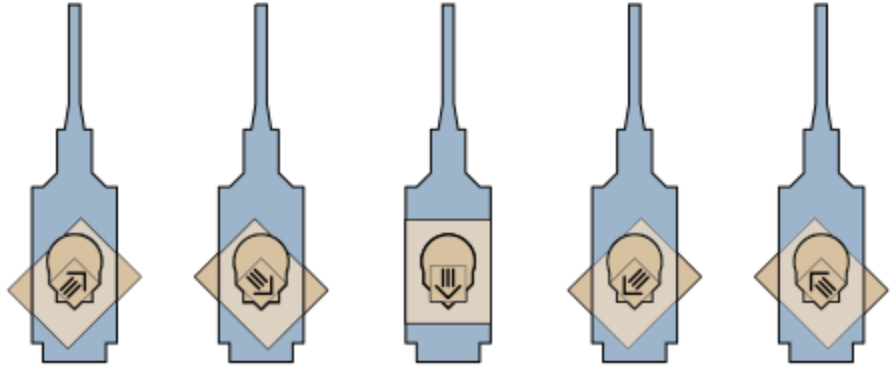
Initial position P6 - P10



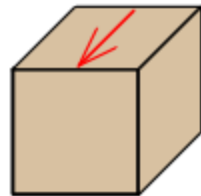
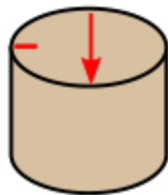
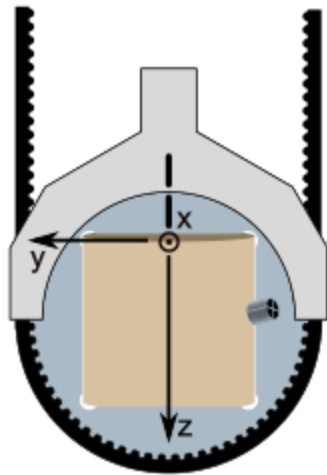
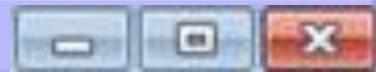
POS 6. POS 7. POS 8. POS 9. POS 10.



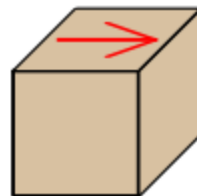
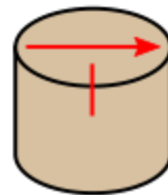
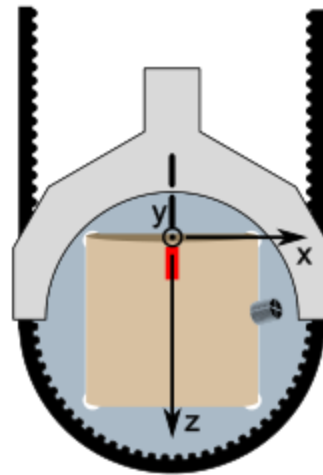
Initial position P11 - P15



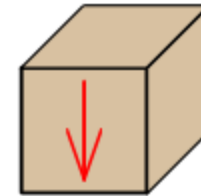
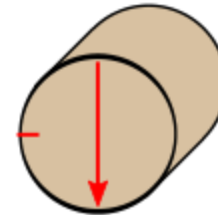
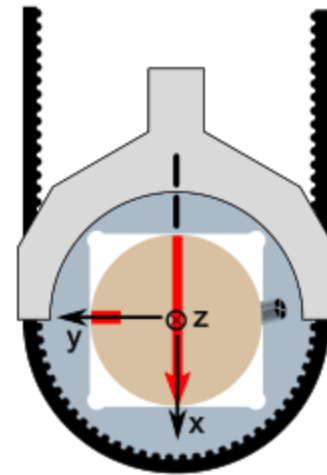
POS 11. POS 12. POS 13. POS 14. POS 15.



POS. 1



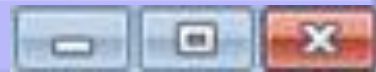
POS. 2



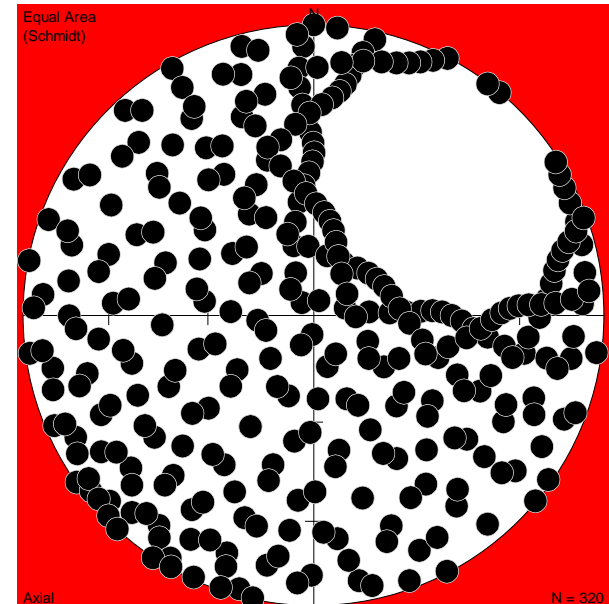
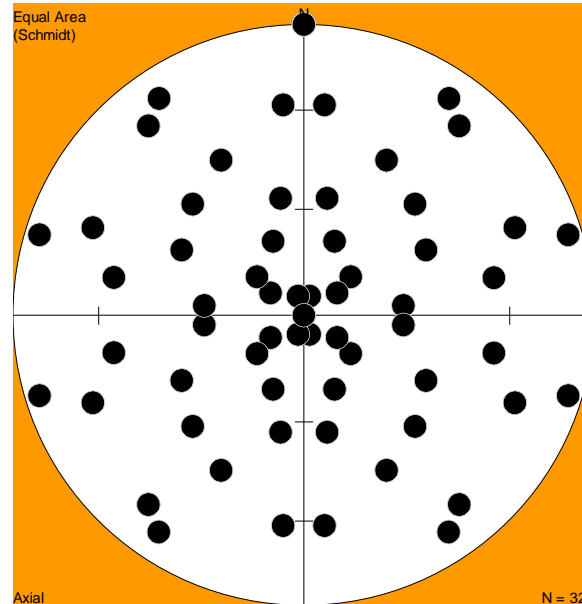
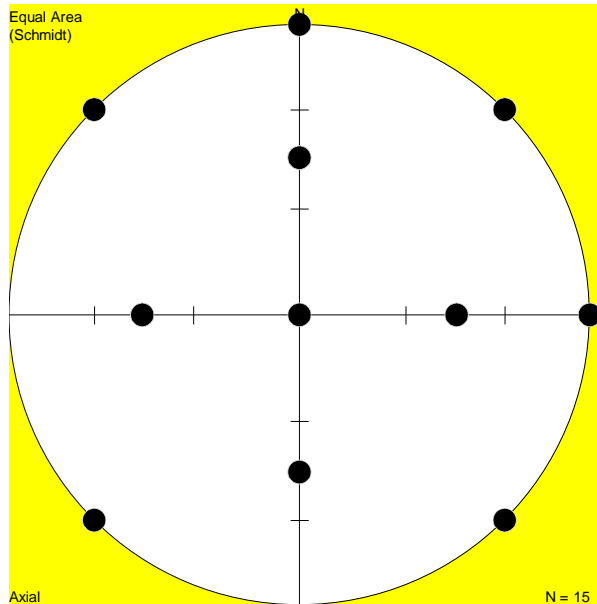
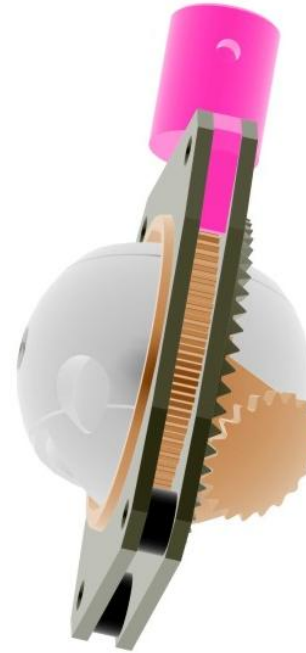
POS. 3



Anisoft5 \ 3D (2-Axis) Rotator



Design	Rotatability coefficient
3 position	1.732
6 position	1.342
9 position	1.183
15 position	1
18 position	1.183
Three-plane rotator	1.464
3D rotator (Agico)	1.325
3D rotator (Sigueira)	1.689



KLY1-4

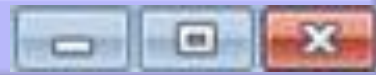
MFK1 & KLY5

Binary file – 64 bytes per record (*.ran)

Binary file – 640 bytes per record (*.ams)

- Specimen name (short)
- Field
- Frequency name
- Mean susceptibility (In-Phase)
- In-Phase susceptibility tensor (either Specimen or Geographic Coord)
- Two sets of mesoscopic data (i.e. Foliation & Lineation)

- Specimen name (**long**)
- Field
- **Frequency value**
- Mean susceptibility (In-Phase)
- **Mean susceptibility (Out-of-Phase)**
- In-Phase susceptibility tensor (**Specimen Coord**)
- **Out-of-Phase susceptibility tensor (Specimen Coord)**
- **Orientation angles**
- **Orientation parameters**
- Two sets of mesoscopic data (i.e. Foliation & Lineation)
- **Not used space...**



Anisoft - [C:\data\DataCeskeStredohori\AMS\CS05.ran] (N = 66)

File Graphics Edit Analysis View Settings About

Export Graphics
 Export Graphics

Specimen

- CS05-16-1
- CS05-16-2
- CS05-16-3
- CS05-16-4
- CS05-16-5
- CS05-17-1
- CS05-17-2
- CS05-17-3
- CS05-17-4
- CS05-18-2
- CS05-18-3
- CS05-19-1
- CS05-19-2
- CS05-18-1
- CS05-19-3
- CS05-20-1
- CS05-20-2
- CS05-21-1
- CS05-21-2
- CS05-22-1
- CS05-22-2
- CS05-22-3
- CS05-22-4
- CS05-23-1
- CS05-23-2
- CS05-23-3
- CS05-23-4
- CS05-24-1
- CS05-24-2

Export Graphics

Geographic Coordinate System
Equal-Area Projection
N = 66

Max
 Int
 Min

Export Graphics

Counts

Km [E-03 SI]

Export Graphics

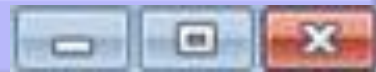
P

Km [E-03 SI]

P = 1.085 T = 0.870 Export Graphics

T

P



Anisoft - [C:\data\DataCeskeStredohori\AMS\CS05.ran] (N = 66)

File Graphics Edit Analysis View Settings About

Export Graphics
 Data
 Conf. Ellips.
 Lines
 Mean Tensor
 Conf. Ellips.
 Kmax GC1
 Kint GC2
 Kmin MFoli
 Foli Line
 D A
 Plane
 Pole
 Strike
 Caption
 Legend

Export Graphics
 Km

Counts

Km [E-03 SI]

Export Graphics
 Km-P

Lines

P

Km [E-03 SI]

Export Graphics
 P-T

Lines

T

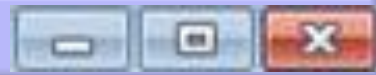
P

Specimen

- CS05-16-1
- CS05-16-2
- CS05-16-3
- CS05-16-4
- CS05-16-5
- CS05-17-1
- CS05-17-2
- CS05-17-3
- CS05-17-4
- CS05-18-2
- CS05-18-3
- CS05-19-1
- CS05-19-2
- CS05-18-1
- CS05-19-3
- CS05-20-1
- CS05-20-2
- CS05-21-1
- CS05-21-2
- CS05-22-1
- CS05-22-2
- CS05-22-3
- CS05-22-4
- CS05-23-1
- CS05-23-2
- CS05-23-3
- CS05-23-4
- CS05-24-1
- CS05-24-2

Geographic Coordinate System

Max
 Int
 Min



Anisoft - [C:\data\DataCeskeStredohori\AMS\CS05.ran] (N = 66)

File Graphics Edit Analysis View Settings About

Export Graphics
 Export Graphics
 Export Graphics

Specimen

- CS05-16-1
- CS05-16-2
- CS05-16-3
- CS05-16-4
- CS05-16-5
- CS05-17-1
- CS05-17-2
- CS05-17-3
- CS05-17-4
- CS05-18-2
- CS05-18-3
- CS05-19-1
- CS05-19-2
- CS05-18-1
- CS05-19-3
- CS05-20-1
- CS05-20-2
- CS05-21-1
- CS05-21-2
- CS05-22-1
- CS05-22-2
- CS05-22-3
- CS05-22-4
- CS05-23-1
- CS05-23-2
- CS05-23-3
- CS05-23-4
- CS05-24-1
- CS05-24-2

Geographic Coordinate System

Equal-Area Projection N = 66

Max
 Int
 Min

Counts

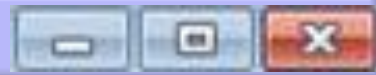
K1Dec [deg]

Export Graphics

Km [E-03 SI]

P = 1.042 T = 0.968 Export Graphics

P



Anisoft - [C:\data\DataCeskeStredohori\AMS\CS05.ran] (N = 66)

File Graphics Edit Analysis View Settings About

Export Graphics
 Export Graphics
 Export Graphics

Specimen

- CS05-16-1
- CS05-16-2
- CS05-16-3
- CS05-16-4
- CS05-16-5
- CS05-17-1
- CS05-17-2
- CS05-17-3
- CS05-17-4
- CS05-18-2
- CS05-18-3
- CS05-19-1
- CS05-19-2
- CS05-18-1
- CS05-19-3
- CS05-20-1
- CS05-20-2
- CS05-21-1
- CS05-21-2
- CS05-22-1
- CS05-22-2
- CS05-22-3
- CS05-22-4
- CS05-23-1
- CS05-23-2
- CS05-23-3
- CS05-23-4
- CS05-24-1
- CS05-24-2

Geographic Coordinate System Equal-Area Projection N = 66

Max
 Int
 Min

Counts

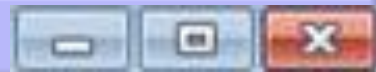
T

P

Km [E-03 SI]

T

P



Anisoft - [C:\data\DataCeskeStredohori\AMS\CS05.ran] (N = 66)

File Graphics Edit Analysis View Settings About

Export Graphics
 Export Graphics

Specimen

- CS05-16-1
- CS05-16-2
- CS05-16-3
- CS05-16-4
- CS05-16-5
- CS05-17-1
- CS05-17-2
- CS05-17-3
- CS05-17-4
- CS05-18-2
- CS05-18-3
- CS05-19-1
- CS05-19-2
- CS05-18-1
- CS05-19-3
- CS05-20-1
- CS05-20-2
- CS05-21-1
- CS05-21-2
- CS05-22-1
- CS05-22-2
- CS05-22-3
- CS05-22-4
- CS05-23-1
- CS05-23-2
- CS05-23-3
- CS05-23-4
- CS05-24-1
- CS05-24-2

Equal-Area Projection
N = 66

Paleogeographic Coordinate System

Export Graphics

Counts

T

Export Graphics

$\rho = 0.000E+00$ $\rho = 0.000$ Export Graphics

P

Km [E-03 SI]

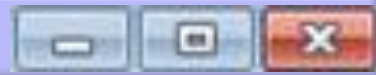
Export Graphics

$P = 1.040$ $T = 0.762$ Export Graphics

T

P

Export Graphics



Anisoft - [C:\data\DataCeskeStredohori\AMS\CS05.ran] (N = 66)

File Graphics Edit Analysis View Settings About

Export Graphics
 Export Graphics
 Export Graphics

Specimen

- CS05-16-1
- CS05-16-2
- CS05-16-3
- CS05-16-4
- CS05-16-5
- CS05-17-1
- CS05-17-2
- CS05-17-3
- CS05-17-4
- CS05-18-2
- CS05-18-3
- CS05-19-1
- CS05-19-2
- CS05-18-1
- CS05-19-3
- CS05-20-1
- CS05-20-2
- CS05-21-1
- CS05-21-2
- CS05-22-1
- CS05-22-2
- CS05-22-3
- CS05-22-4
- CS05-23-1
- CS05-23-2
- CS05-23-3
- CS05-23-4
- CS05-24-1
- CS05-24-2

Tectonic Coordinate System
Equal-Area Projection
N = 66

Max
 Int
 Min

Counts

T

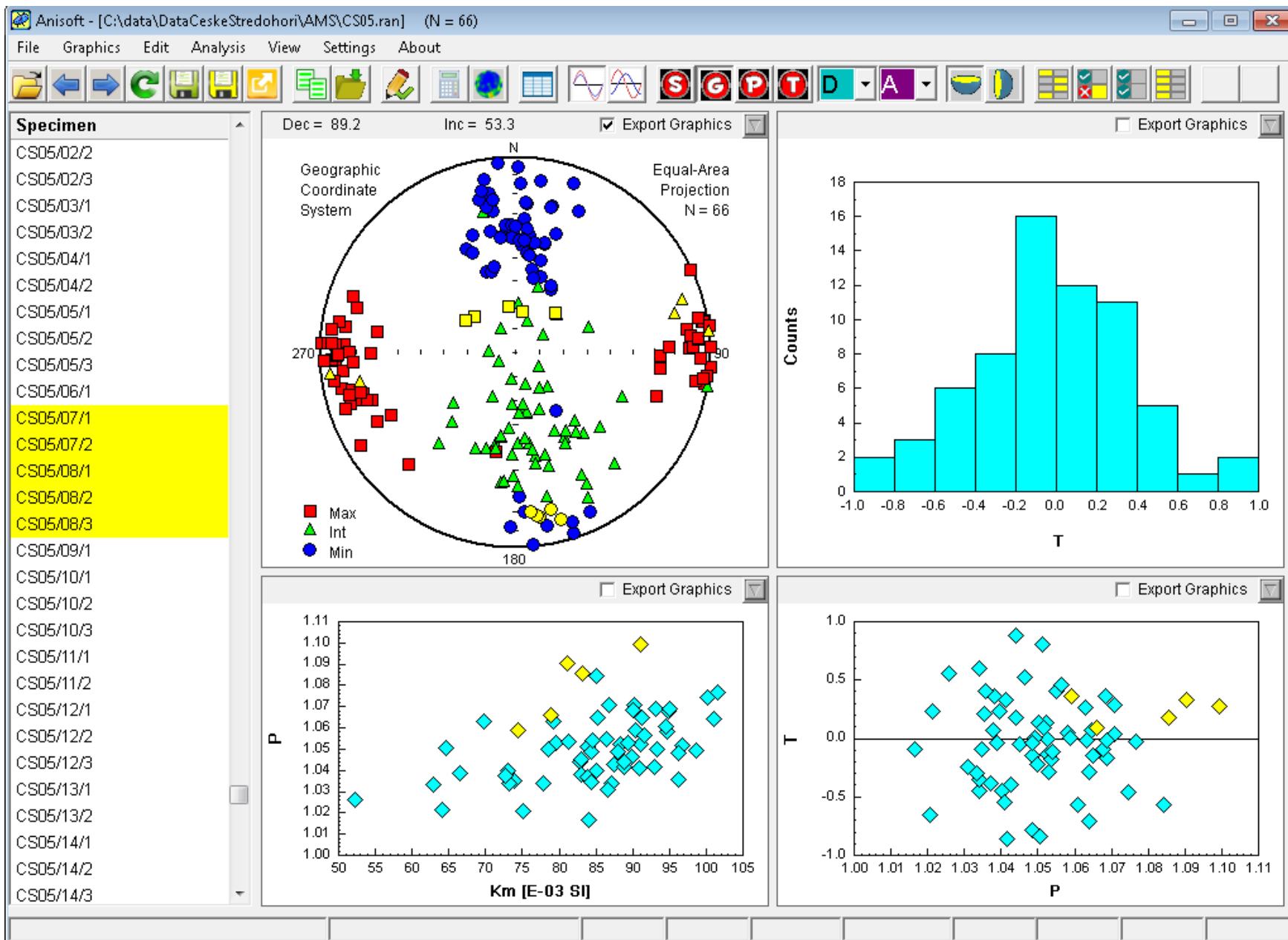
Km = 95.38E-03 P = 1.096

P

Km [E-03 SI]

T

P



Anisoft5 \ Data Table & Data Filtering

Anisoft - [C:\data\DataCeskeStredohori\AMS\CS05.ran] (N = 66)

File Graphics Edit Analysis View Settings About

Data Table

ID	Specimen	Field	Freq	Km	Kmax	Kint	Kmin	L	F	P	Pj	T	U	Q	E			
34	CS05/02/1	423	875	86.66E-03	255.9	13.5	151.8	45.4	358.2	41.5	1.019	1.012	1.031	1.031	-0.241	-0.248	0.907	0.993
35	CS05/02/2	423	875	64.06E-03	286.0	17.1	138.0	70.1	19.1	9.9	1.008	1.013	1.021	1.021	0.229	0.224	0.481	1.005
36	CS05/02/3	423	875	84.44E-03	272.7	4.5	173.1	64.8	4.8	24.7	1.019	1.016	1.035	1.035	-0.094	-0.102	0.761	0.997
37	CS05/03/1	423	875	52.19E-03	270.0	27.3	139.8	51.3	14.0	25.1	1.006	1.020	1.026	1.027	0.553	0.549	0.254	1.014
38	CS05/03/2	423	875	73.88E-03	269.1	9.8	147.4	71.8	1.8	15.1	1.014	1.021	1.035	1.036	0.209	0.201	0.499	1.007
39	CS05/04/1	423	875	73.24E-03	278.4	29.5	72.2	57.8	181.6	11.8	1.024	1.009	1.034	1.035	-0.446	-0.453	1.141	0.985
40	CS05/04/2	423	875	77.91E-03	289.0	13.5	169.7	63.9	24.5	21.9	1.023	1.011	1.034	1.035	-0.351	-0.359	1.029	0.988
41	CS05/05/1	423	875	75.06E-03	251.7	9.3	346.7	28.1	145.2	60.1	1.017	1.004	1.021	1.022	-0.651	-0.654	1.411	0.987
42	CS05/05/2	423	875	82.98E-03	264.1	12.4	164.0	38.5	8.6	48.8	1.023	1.021	1.045	1.045	-0.049	-0.060	0.721	0.998
43	CS05/05/3	423	875	81.25E-03	266.5	18.0	167.8	24.8	28.7	58.6	1.031	1.022	1.054	1.054	-0.182	-0.195	0.852	0.990
44	CS05/06/1	423	875	84.07E-03	107.3	25.7	219.6	38.3	352.7	40.9	1.009	1.007	1.017	1.017	-0.095	-0.099	0.758	0.998
45	CS05/07/1	423	875	78.91E-03	10.5	72.9	262.9	5.3	171.4	16.2	1.030	1.035	1.066	1.066	0.087	0.071	0.605	1.006
46	CS05/07/2	423	875	74.40E-03	44.9	66.3	259.0	20.0	164.5	12.2	1.019	1.040	1.059	1.060	0.359	0.347	0.390	1.021
47	CS05/08/1	423	875	83.16E-03	311.6	67.3	72.8	12.2	167.0	18.8	1.034	1.050	1.086	1.086	0.179	0.159	0.532	1.015
48	CS05/08/2	423	875	81.12E-03	302.5	65.2	76.8	17.8	172.3	16.6	1.029	1.059	1.090	1.092	0.334	0.315	0.414	1.029
49	CS05/08/3	423	875	91.06E-03	351.5	70.9	84.0	0.9	174.3	19.1	1.035	1.062	1.099	1.100	0.272	0.250	0.462	1.026
50	CS05/09/1	423	875	100.2E-03	64.6	1.6	326.1	79.2	154.9	10.7	1.054	1.019	1.075	1.077	-0.464	-0.478	1.173	0.967
51	CS05/10/1	423	875	72.76E-03	88.4	12.3	186.5	33.0	340.8	54.2	1.017	1.020	1.038	1.038	0.070	0.061	0.613	1.003
52	CS05/10/2	423	875	94.81E-03	88.2	10.2	185.0	33.4	343.5	54.7	1.037	1.030	1.068	1.068	-0.097	-0.113	0.771	0.994
53	CS05/10/3	423	875	101.5E-03	85.9	7.0	181.0	36.1	346.5	53.0	1.039	1.036	1.077	1.077	-0.030	-0.049	0.711	0.998
54	CS05/11/1	423	875	62.87E-03	277.1	5.9	163.0	75.7	8.4	12.9	1.022	1.012	1.033	1.034	-0.295	-0.302	0.965	0.990
55	CS05/11/2	423	875	88.01E-03	273.1	6.7	179.0	31.1	13.9	58.1	1.043	1.005	1.049	1.053	-0.785	-0.789	1.619	0.963
56	CS05/12/1	423	875	84.44E-03	80.6	3.1	176.9	64.0	349.1	25.8	1.028	1.020	1.049	1.049	-0.149	-0.161	0.817	0.993
57	CS05/12/2	423	875	78.45E-03	79.1	5.9	183.6	67.6	346.8	21.5	1.030	1.019	1.050	1.050	-0.224	-0.235	0.894	0.989
58	CS05/12/3	423	875	84.59E-03	81.9	0.1	172.2	67.6	351.8	22.4	1.030	1.024	1.054	1.054	-0.113	-0.126	0.784	0.994
59	CS05/13/1	423	875	85.12E-03	98.9	7.4	196.8	46.7	2.1	42.4	1.065	1.018	1.084	1.089	-0.563	-0.577	1.302	0.955
60	CS05/13/2	423	875	95.08E-03	97.8	3.4	191.6	47.8	4.7	42.0	1.034	1.033	1.069	1.069	-0.013	-0.029	0.693	0.999
61	CS05/14/1	423	875	101.1E-03	82.3	12.6	206.8	68.5	348.3	17.1	1.055	1.009	1.064	1.069	-0.713	-0.720	1.509	0.957

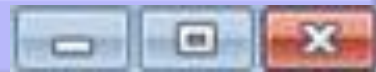
Edit Data																			
#	Specimen	Orientation		Foliation1			Lineation1			Foliation2			Lineation2			Orientation Parameters			
		Dec	Inc	Code	Dec	Inc	Code	Dec	Inc	Code	Dec	Inc	Code	Dec	Inc	OP1	OP2	OP3	OP4
1	CS05-16-1			D	108	83	A	350	18							12	90	6	0
2	CS05-16-2			D	108	83										12	90	6	0
3	CS05-16-3			D	108	83										12	90	6	0
4	CS05-16-4			D	108	83										12	90	6	0
5	CS05-16-5			D	108	83										12	90	6	0
6	CS05-17-1			D	108	83										12	90	6	0
7	CS05-17-2			D	108	83										12	90	6	0
8	CS05-17-3			D	108	83										12	90	6	0
9	CS05-17-4			D	108	83										12	90	6	0
10	CS05-18-2			D	108	83										12	90	6	0
11	CS05-18-3			D	108	83										12	90	6	0
12	CS05-19-1			D	108	83										12	90	6	0
13	CS05-19-2			D	108	83										12	90	6	0
14	CS05-18-1			D	108	83										12	90	6	0
15	CS05-19-3			D	108	83										12	90	6	0
16	CS05-20-1			D	108	83										12	90	6	0
17	CS05-20-2			D	108	83										12	90	6	0
18	CS05-21-1			D	108	83										12	90	6	0
19	CS05-21-2			D	108	83										12	90	6	0
20	CS05-22-1			D	108	83										12	90	6	0
21	CS05-22-2			D	108	83										12	90	6	0
22	CS05-22-3			D	108	83										12	90	6	0
23	CS05-22-4			D	108	83										12	90	6	0
24	CS05-23-1			D	108	83										12	90	6	0
25	CS05-23-2			D	108	83										12	90	6	0

SAVE

CANCEL



Anisoft5 \ Group Statistics



Anisoft - [C:\data\DataCeskeStredohori\AMS\CS05.ran] (N = 66)

File Graphics Edit Analysis View Settings About

Specimen

- CS05/02/2
- CS05/02/3
- CS05/03/1
- CS05/03/2
- CS05/04/1
- CS05/04/2
- CS05/05/1
- CS05/05/2
- CS05/05/3
- CS05/06/1
- CS05/07/1
- CS05/07/2
- CS05/08/1
- CS05/08/2
- CS05/08/3
- CS05/09/1
- CS05/10/1
- CS05/10/2
- CS05/10/3
- CS05/11/1
- CS05/11/2
- CS05/12/1
- CS05/12/2
- CS05/12/3
- CS05/13/1
- CS05/13/2
- CS05/14/1
- CS05/14/2
- CS05/14/3

Geographic Coordinate System Equal-Area Projection N = 66

Legend: Max (red square), Int (green triangle), Min (blue circle)

Group Statistics

N = 66

	Mean Tensor			
	Normed Semi-Axes	Dec	Inc	Conf. Ellips.
Kmax	1.021	265.3	5.2	16.9 9.6
Kint	0.998	164.3	64.4	37.2 16.6
Kmin	0.981	357.7	24.9	37.1 9.8

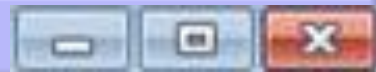
	Mean Tensor	Average	Std. Err.
Km	N/A	85.08E-03	10.04E-03
L	1.023	1.026	0.012
F	1.017	1.025	0.013
P	1.040	1.052	0.017
Pj	1.040	1.053	0.017
T	-0.145	-0.027	0.382
U	-0.155	-0.038	0.381
Q	0.811	0.748	0.374
E	0.994	0.999	0.019

P vs Km [E-03 SI]

T vs P



Anisoft5 \ Contour Plot



Anisoft - [C:\data\DataCeskeStredohori\AMS\CS05.ran] (N = 66)

File Graphics Edit Analysis View Settings About

Export Graphics Export Graphics

Specimen

- CS05/02/2
- CS05/02/3
- CS05/03/1
- CS05/03/2
- CS05/04/1
- CS05/04/2
- CS05/05/1
- CS05/05/2
- CS05/05/3
- CS05/06/1
- CS05/07/1
- CS05/07/2
- CS05/08/1
- CS05/08/2
- CS05/08/3
- CS05/09/1
- CS05/10/1
- CS05/10/2
- CS05/10/3
- CS05/11/1
- CS05/11/2
- CS05/12/1
- CS05/12/2
- CS05/12/3
- CS05/13/1
- CS05/13/2
- CS05/14/1
- CS05/14/2
- CS05/14/3

Geographic Coordinate System
Equal-Area Projection
N = 66

270 180

Max
Int
Min

1.11
1.10
1.09
1.08
1.07
1.06
1.05
1.04
1.03
1.02
1.01
1.00

50 55 60 65 70 75 80 85 90

Km [E-03 SI]

Countour Plot

Input

- Kmax
- Kint
- Kmin
- Foliation Pole
- Lineation

Refresh

Levels

- Continuous
- Discrete

Show

- Data Points
- Contours

Smoothing

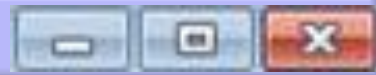
64

CALCULATE

DATA TO CLIPBOARD GRAPHICS TO CLIPBOARD CLOSE

18 16 14

0 1 3 5 7 9 11 13 15 17 19 20.6 Max



Instrument Settings

Beta version available at:
www.agico.com/files/anisoft5.exe
chadima@agico.cz

About Safyr7

**Thanks for
your
attention!**

ADVANCED GEOSCIENCE INSTRUMENTS COMPANY

CLOSE