

YIELD LOCUS OF: Eskal 300

ORDER: Hao Shi

Mean normal stress at preshear: SIGMA_{pre,m} = 122 Pa

Raw data:

N_{pre} = 0,2323 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	1663,1	-0,680	0,0707	0,2252	0,1730
4	1	1663,1	-0,690	0,0707	0,2092	0,1609
2	1	1663,1	-0,730	0,1263	0,2212	0,1931
3	1	1663,1	-0,700	0,1868	0,2092	0,2092

Stresses:

Tau_{pre,m} = 151 PaSIGMA_{pre,m} = 122 Pa

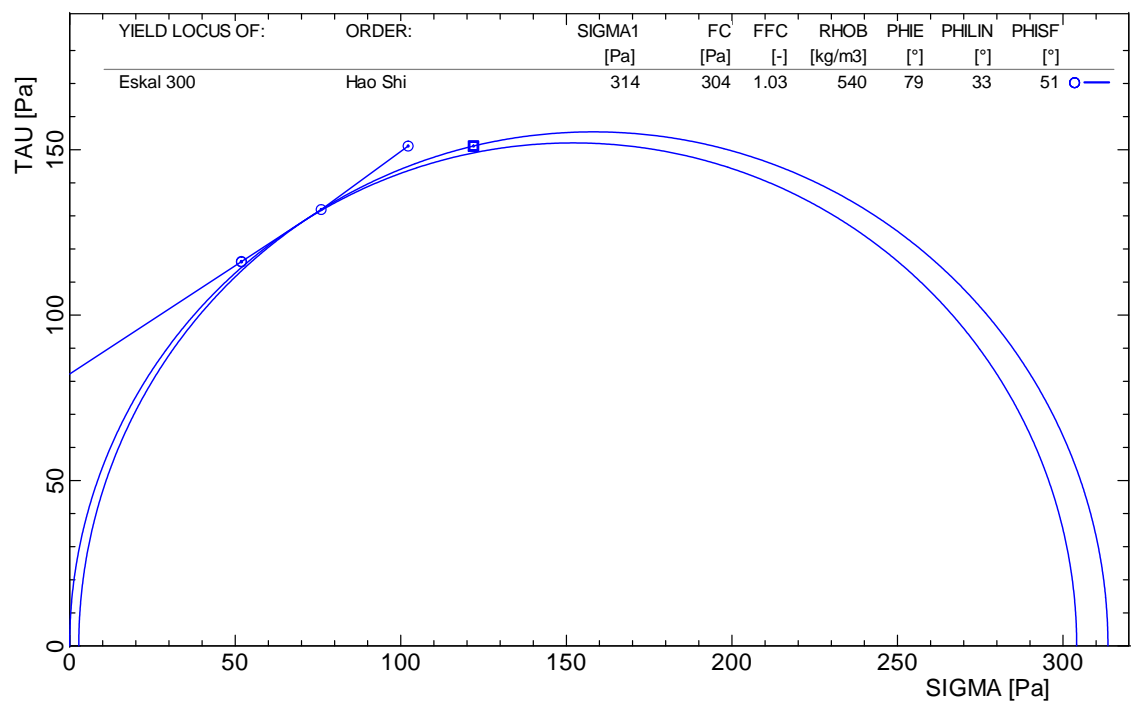
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	52	157	121	116	540
4	52	146	112	116	540
2	76	155	135	132	540
3	102	146	146	151	540

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
314	304	1,03	0,56	82	540	79,3	33,2	51,1

Approximation of the yield locus: Straight sections

Prorating: on



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Mean normal stress at preshear: SIGMA_{pre,m} = 121 Pa

Raw data:

N_{pre} = 0,2323 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	1624,4	0,360	0,0707	0,2092	0,1609
4	1	1624,4	0,500	0,0707	0,2092	0,1609
2	1	1624,4	0,380	0,1263	0,2092	0,1850
3	1	1624,4	0,420	0,1868	0,2011	0,2011

Stresses:

Tau_{pre,m} = 145 PaSIGMA_{pre,m} = 121 Pa

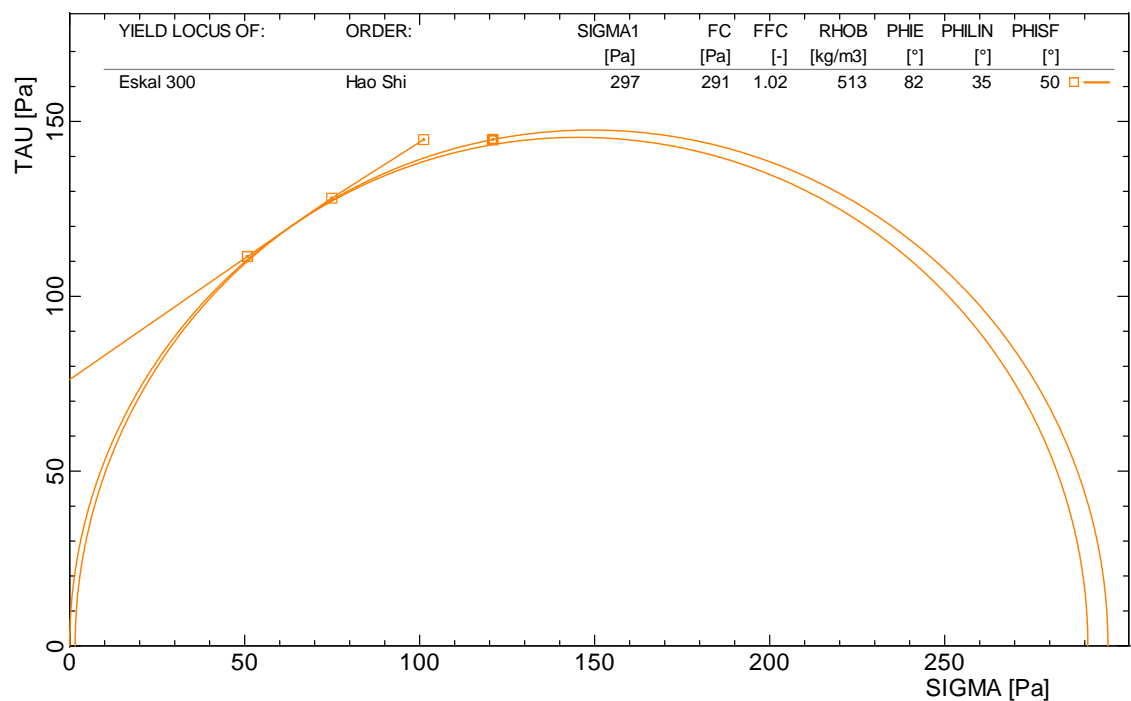
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	51	146	112	111	512
4	51	146	112	111	514
2	75	146	129	128	512
3	101	141	141	145	513

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
297	291	1,02	0,52	76	513	81,7	34,7	50,1

Approximation of the yield locus: Straight sections

Prorating: on



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ORDER: Hao Shi

Mean normal stress at preshear: SIGMA_{pre,m} = 121 Pa

Raw data:

N_{pre} = 0,2323 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	1622,6	0,210	0,0707	0,2172	0,1689
4	1	1622,6	0,330	0,0707	0,2132	0,1649
2	1	1622,6	0,210	0,1263	0,2092	0,1890
3	1	1622,6	0,270	0,1868	0,2092	0,2092

Stresses:

Tau_{pre,m} = 148 PaSIGMA_{pre,m} = 121 Pa

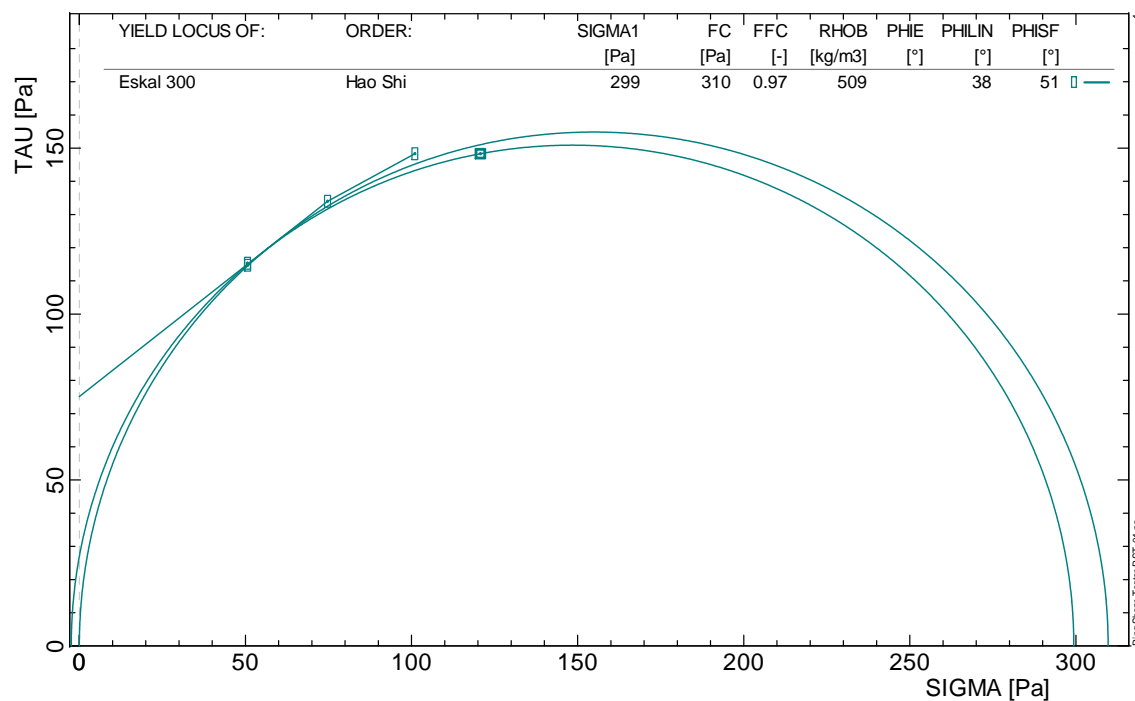
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	51	152	118	115	508
4	51	149	115	115	510
2	75	146	132	134	508
3	101	146	146	148	509

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
299	310	0,97	0,49	75	509		38,2	50,9

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal 300

ORDER: Hao Shi

Mean normal stress at preshear: SIGMA_{pre,m} = 424 Pa

Raw data:

N_{pre} = 0,9241 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	1601,9	7,330	0,2778	0,6677	0,4545
4	1	1601,9	7,490	0,2778	0,6757	0,4666
2	1	1601,9	7,400	0,5050	0,6717	0,5591
3	1	1601,9	7,450	0,7373	0,6757	0,6476

Stresses:

Tau_{pre,m} = 470 PaSIGMA_{pre,m} = 424 Pa

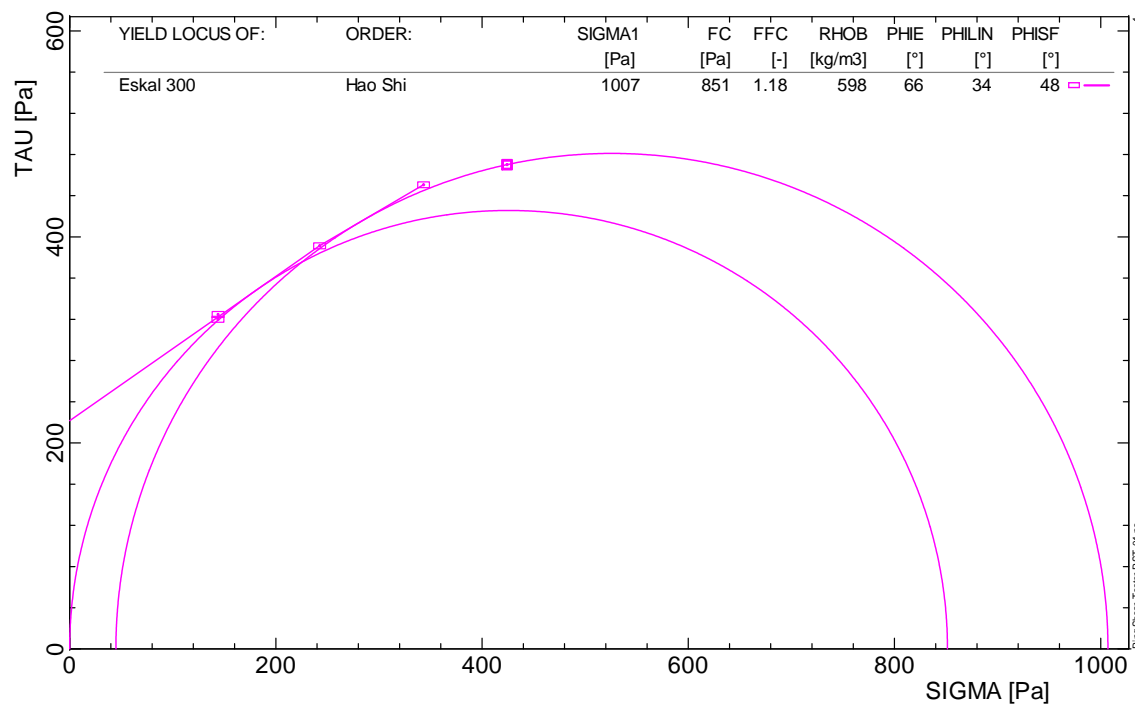
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	144	467	318	320	596
4	144	472	326	325	599
2	242	469	391	391	597
3	343	472	453	451	598

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
1007	851	1,18	0,71	222	598	66,2	33,5	47,9

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal 300

ORDER: Hao Shi

Mean normal stress at preshear: SIGMA_{pre,m} = 424 Pa

Raw data:

N_{pre} = 0,9241 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	1634,1	4,840	0,2778	0,6556	0,4465
4	1	1634,1	5,070	0,2778	0,6757	0,4746
2	1	1634,1	4,930	0,5050	0,6596	0,5551
3	1	1634,1	5,010	0,7373	0,6717	0,6435

Stresses:

Tau_{pre,m} = 465 PaSIGMA_{pre,m} = 424 Pa

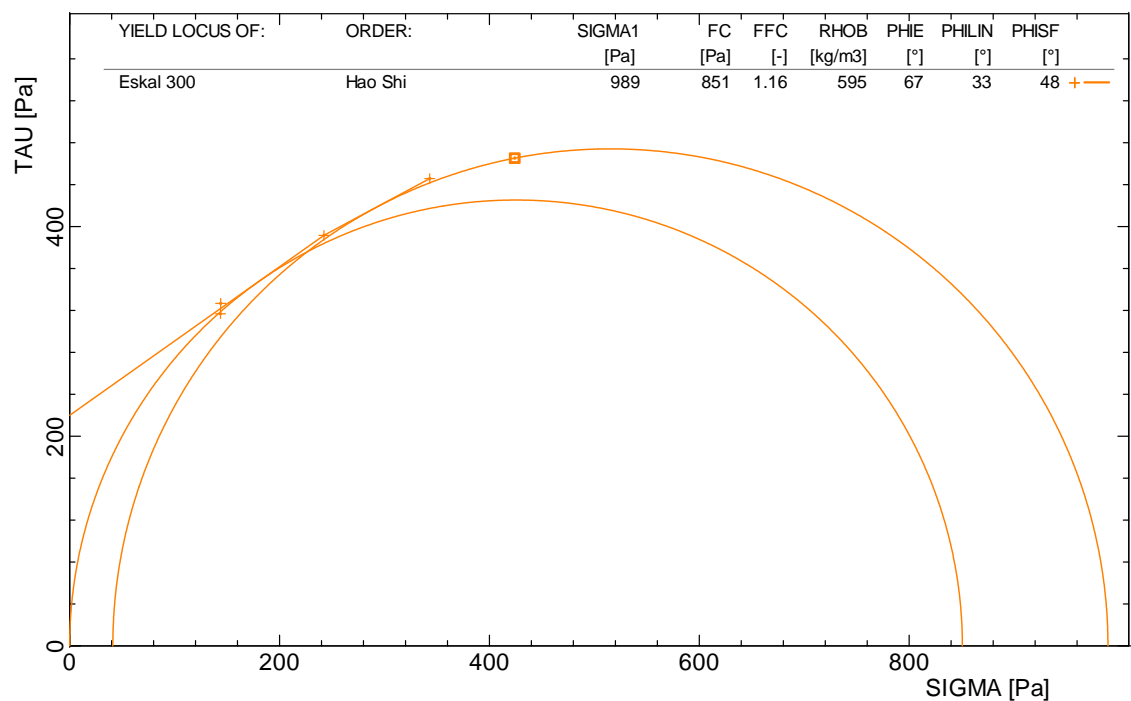
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	144	458	312	317	592
4	144	472	332	327	597
2	242	461	388	392	594
3	343	469	450	446	595

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
989	851	1,16	0,69	220	595	66,9	32,8	47,6

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal 300

ORDER: Hao Shi

Mean normal stress at preshear: SIGMA_{pre,m} = 424 Pa

Raw data:

N_{pre} = 0,9241 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	1611,4	6,390	0,2778	0,6596	0,4465
4	1	1611,4	6,560	0,2778	0,6838	0,4666
2	1	1611,4	6,460	0,5050	0,6677	0,5551
3	1	1611,4	6,510	0,7373	0,6677	0,6355

Stresses:

Tau_{pre,m} = 468 PaSIGMA_{pre,m} = 424 Pa

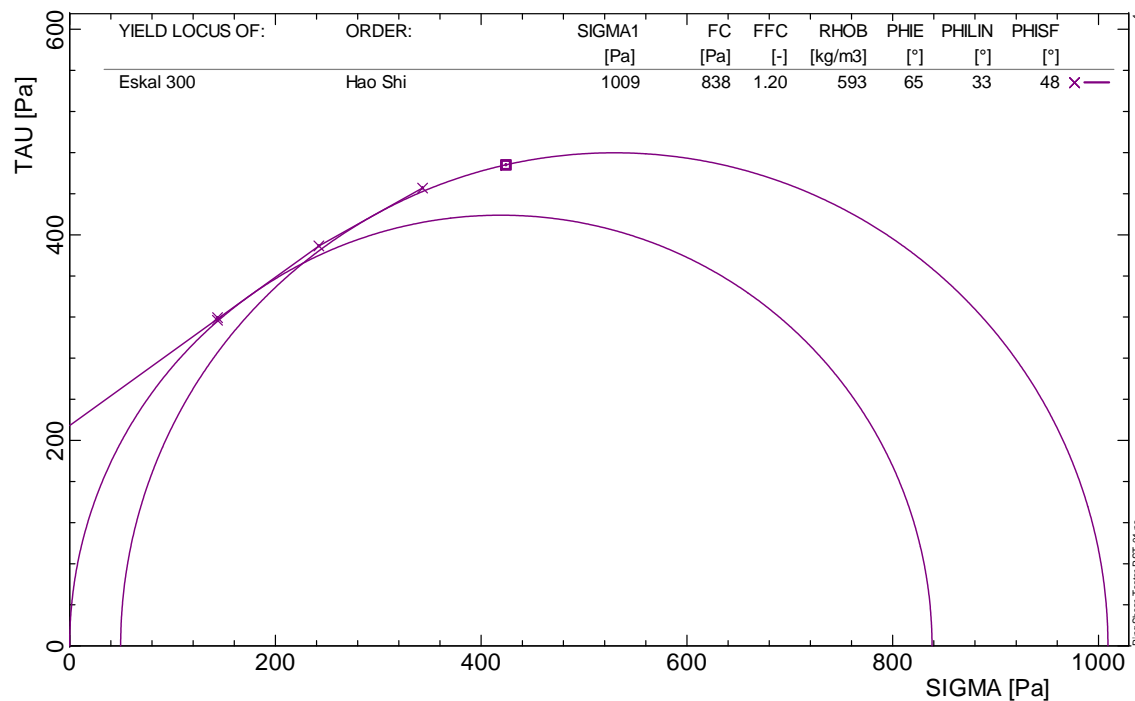
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	144	461	312	317	591
4	144	478	326	319	594
2	242	467	388	389	592
3	343	467	444	446	593

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
1009	838	1,20	0,71	215	593	65,0	33,4	47,8

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal 300

ORDER: Hao Shi

Mean normal stress at preshear: SIGMA,pre,m = 825 Pa

Raw data:

N,pre = 1,8432 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	1615,0	9,060	0,5555	1,2549	0,8165
4	1	1615,0	9,200	0,5555	1,2791	0,8366
2	1	1615,0	9,130	1,0151	1,2710	1,0297
3	1	1615,0	9,170	1,4746	1,2791	1,2107

Stresses:

Tau,pre,m = 888 Pa

SIGMA,pre,m = 825 Pa

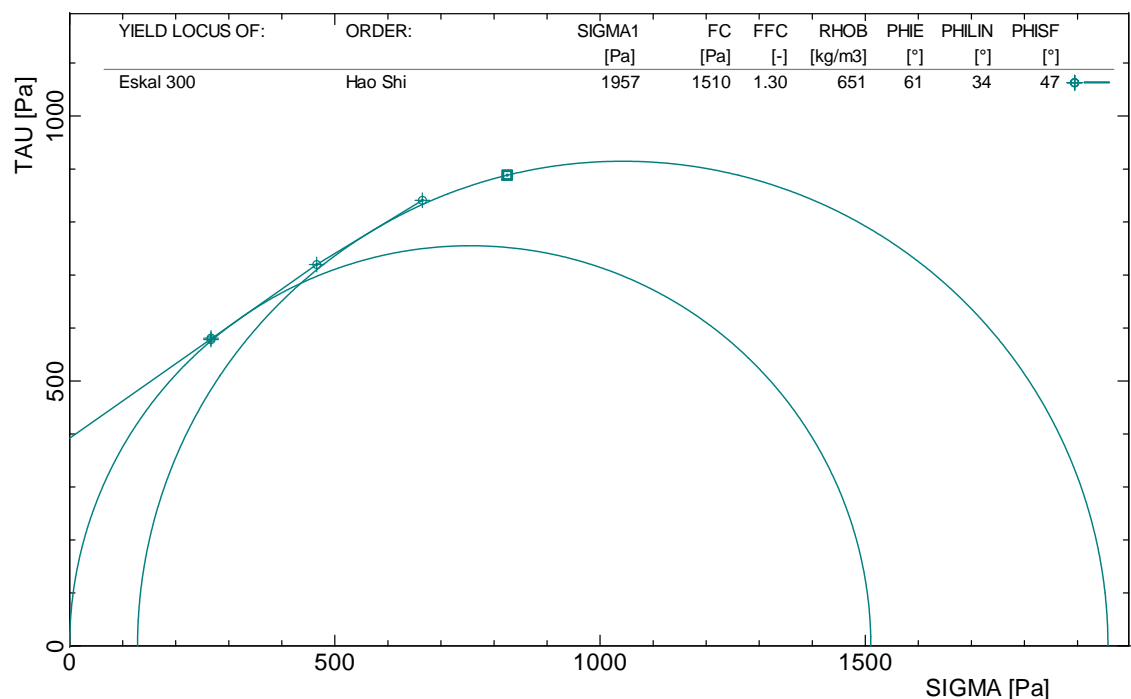
No.	SIGMA,sh [Pa]	TAU,pre [Pa]	TAU,sh [Pa]	TAU,sh,pr [Pa]	RHOB [kg/m3]
1	266	877	571	578	650
4	267	894	585	581	653
2	466	888	720	720	651
3	665	894	846	841	652

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU,C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
1957	1510	1,30	0,84	392	651	61,3	33,7	47,1

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal 300

ORDER: Hao Shi

Mean normal stress at preshear: SIGMA_{pre,m} = 825 Pa

Raw data:

N_{pre} = 1,8432 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	1615,2	9,150	0,5555	1,2750	0,8205
4	1	1615,2	9,270	0,5555	1,3072	0,8447
2	1	1615,2	9,200	1,0151	1,2791	1,0377
3	1	1615,2	9,230	1,4746	1,2871	1,2147

Stresses:

Tau_{pre,m} = 900 PaSIGMA_{pre,m} = 825 Pa

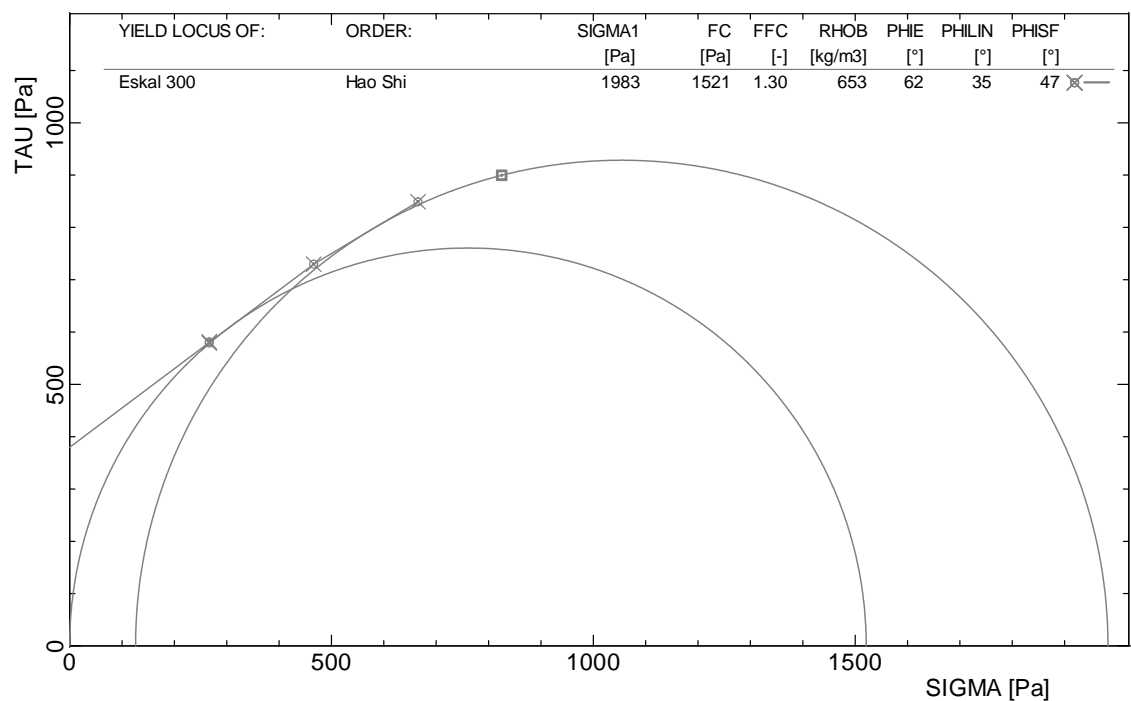
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	267	891	574	579	652
4	267	914	590	581	655
2	466	894	725	730	653
3	665	900	849	849	654

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
1983	1521	1,30	0,85	380	653	61,7	34,8	47,5

Approximation of the yield locus: Straight sections

Prorating: on



YIELD LOCUS OF: Eskal 300

ORDER: Hao Shi

Mean normal stress at preshear: SIGMA_{pre,m} = 825 Pa

Raw data:

N_{pre} = 1,8432 kg

No.	Shear cell	m,tot [g]	Dh [mm]	N,sh [kg]	S,pre [kg]	S,sh [kg]
1	1	1619,5	8,590	0,5555	1,2388	0,8125
4	1	1619,5	8,750	0,5555	1,2710	0,8326
2	1	1619,5	8,670	1,0151	1,2549	1,0136
3	1	1619,5	8,710	1,4746	1,2589	1,1906

Stresses:

Tau_{pre,m} = 878 PaSIGMA_{pre,m} = 825 Pa

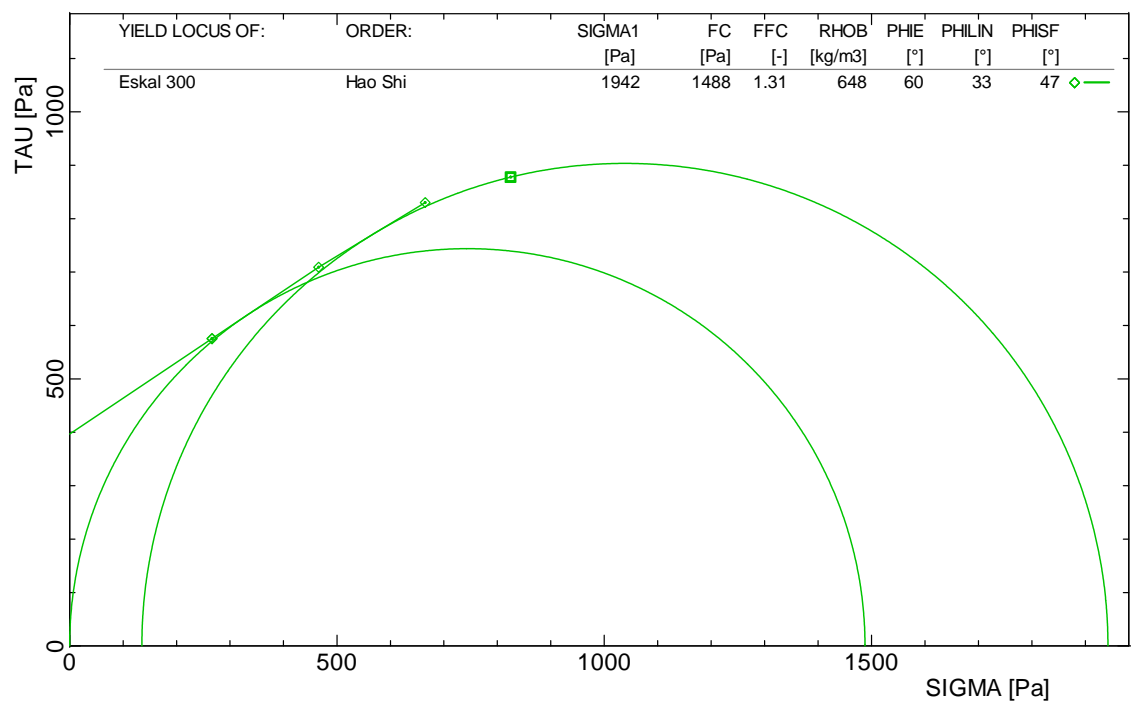
No.	SIGMA _{sh} [Pa]	TAU _{pre} [Pa]	TAU _{sh} [Pa]	TAU _{sh,pr} [Pa]	RHOB [kg/m3]
1	266	866	568	576	646
4	266	888	582	575	649
2	466	877	708	709	648
3	665	880	832	830	648

Parameters of yield locus (flow properties):

SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	TAU _C [Pa]	RHOB [kg/m3]	PHIE [°]	PHILIN [°]	PHISF [°]
1942	1488	1,31	0,85	397	648	60,4	32,8	46,8

Approximation of the yield locus: Straight sections

Prorating: on



Flowability (summary of test results for yield loci)

Bulk solid	Order	SIGMA1 [Pa]	FC [Pa]	FFC [-]	FFRHO [-]	RHOB [kg/m3]
Eskal 300	Hao Shi	314	304	1,03	0,56	540
Eskal 300	Hao Shi	297	291	1,02	0,52	513
Eskal 300	Hao Shi	299	310	0,97	0,49	509
Eskal 300	Hao Shi	1007	851	1,18	0,71	598
Eskal 300	Hao Shi	989	851	1,16	0,69	595
Eskal 300	Hao Shi	1009	838	1,20	0,71	593
Eskal 300	Hao Shi	1957	1510	1,30	0,84	651
Eskal 300	Hao Shi	1983	1521	1,30	0,85	653
Eskal 300	Hao Shi	1942	1488	1,31	0,85	648

Approximation of the yield loci: Straight sections

Prorating: on

