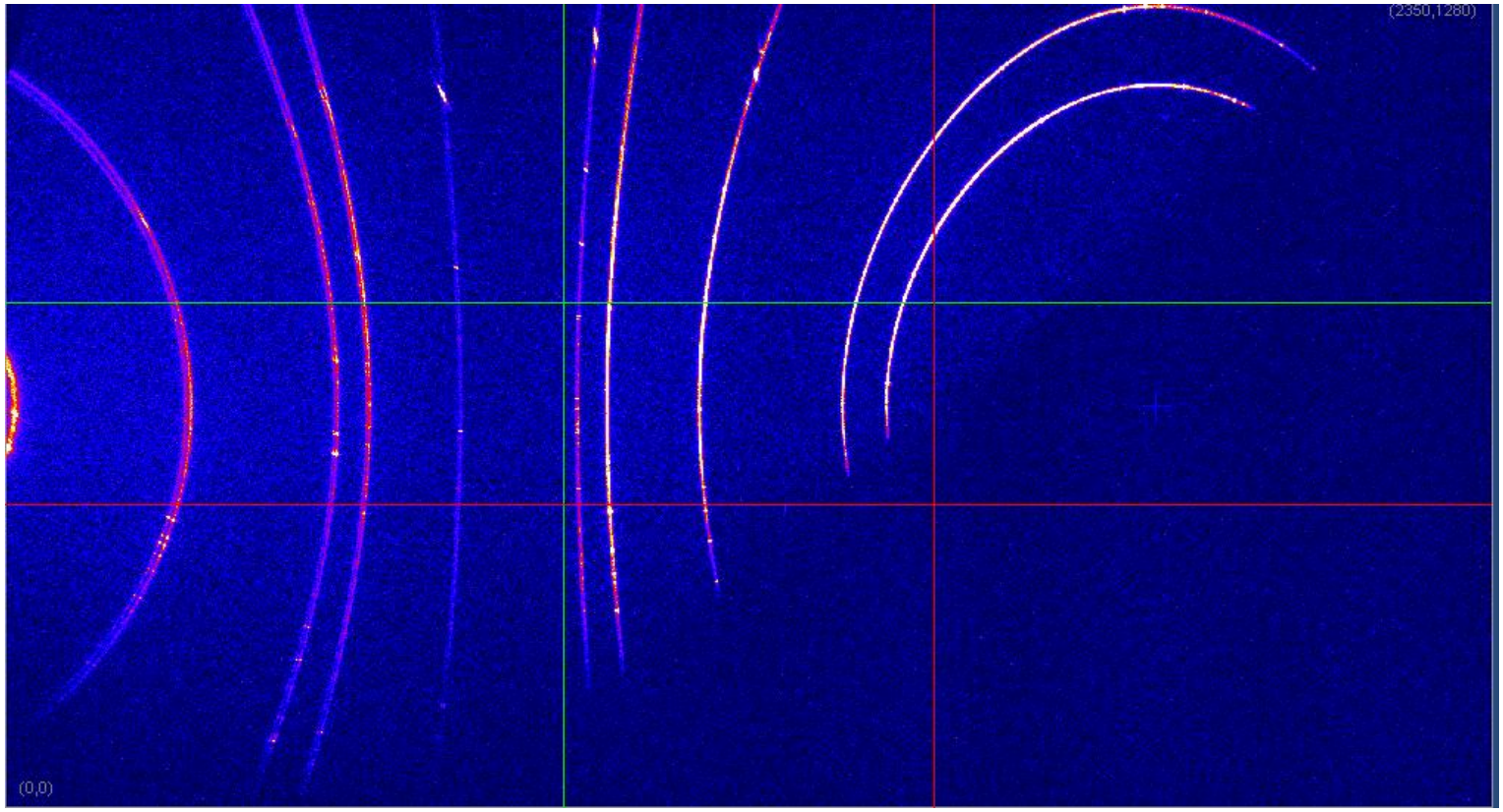
２DP極点処理とODF

２DP極点図を最新CTRソフトウエアで処理し、ODF解析
LaboTex3．0（Ver3．0．5．3）
MTEX(Ver5．1．1）を使用

２０１８年１０月
HelperTex　Office

ImageData



ImageDataからASC極点図を切り出す。
Randomデータからdefocus曲線作成は1deg間隔
Sampleは5deg間隔（1deg間隔の場合、1deg->5deg処理を行う）

RAPID->2DP->DATA

RAPID2-007-100μm-FT10sec ▸ 2018-10-03 ▸ random

名前	更新日時	種類	サイズ
111-1deg.asc	2007/06/19 8:24	RINT2000ｱｽｷｰ	263 KB
111-5deg.asc	2007/06/19 8:25	RINT2000ｱｽｷｰ	16 KB
200-1deg.asc	2007/06/18 21:59	RINT2000ｱｽｷｰ	260 KB
200-5deg.asc	2007/06/18 22:00	RINT2000ｱｽｷｰ	16 KB
220-1deg.asc	2007/06/18 21:46	RINT2000ｱｽｷｰ	255 KB
220-5deg.asc	2007/06/18 21:46	RINT2000ｱｽｷｰ	15 KB
311-1deg.asc	2007/06/18 21:50	RINT2000ｱｽｷｰ	256 KB
311-5deg.asc	2007/06/18 21:51	RINT2000ｱｽｷｰ	16 KB

RAPID2-007-100μm-FT10sec ▸ 2018-10-03 ▸ sample

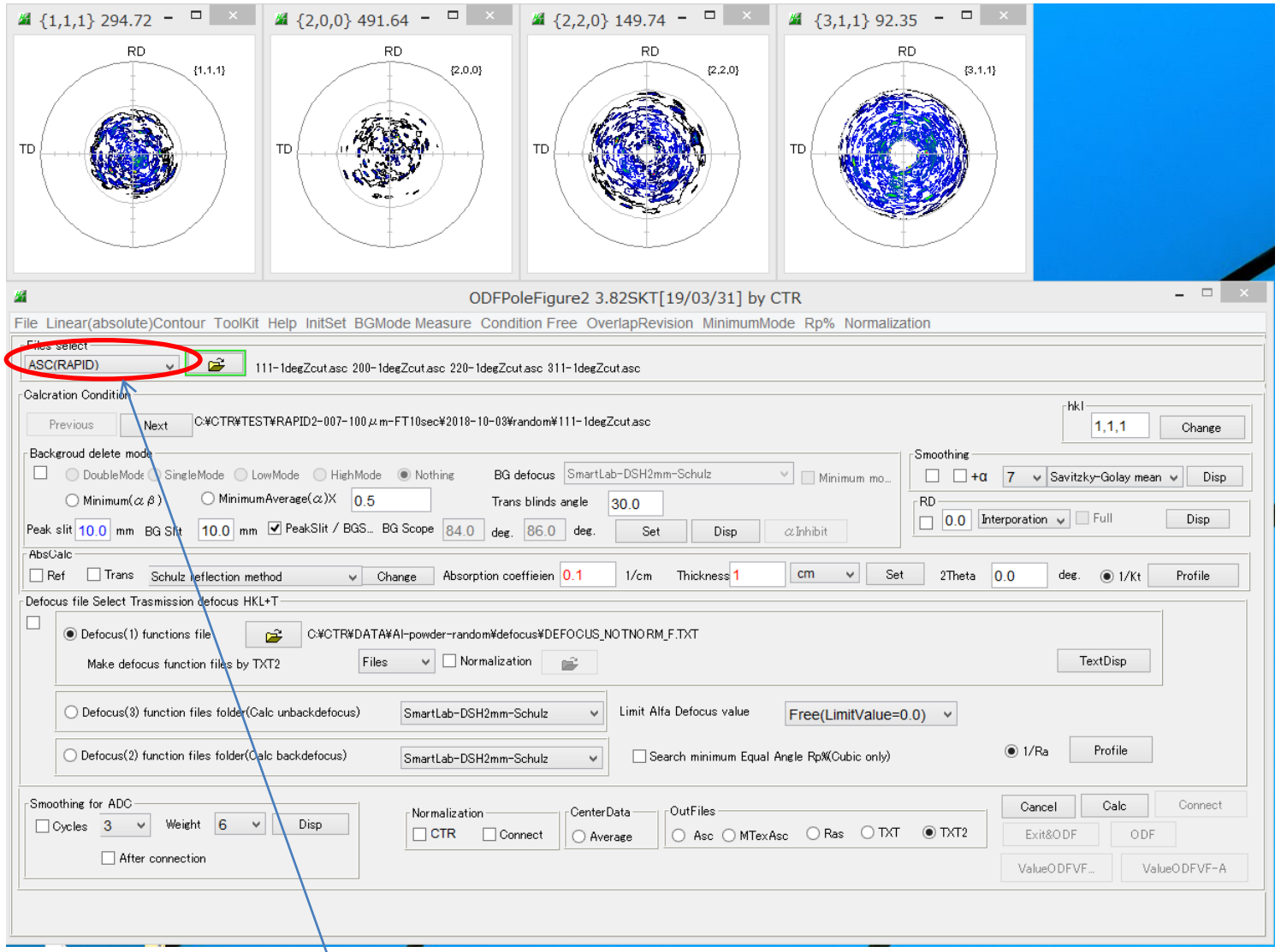
名前	更新日時	種類	サイズ
Alsample111-1deg.asc	2007/06/19 15:11	RINT2000ｱｽｷｰ	253 KB
Alsample111-5deg.asc	2007/06/19 15:11	RINT2000ｱｽｷｰ	15 KB
Alsample200-1deg.asc	2007/06/19 15:15	RINT2000ｱｽｷｰ	258 KB
Alsample200-5deg.asc	2007/06/19 15:15	RINT2000ｱｽｷｰ	16 KB
Alsample220-1deg.asc	2007/06/19 15:31	RINT2000ｱｽｷｰ	252 KB
Alsample220-5deg.asc	2007/06/19 15:31	RINT2000ｱｽｷｰ	15 KB
Alsample311-1deg.asc	2007/06/19 15:33	RINT2000ｱｽｷｰ	252 KB
Alsample311-5deg.asc	2007/06/19 15:33	RINT2000ｱｽｷｰ	15 KB

```
*TYPE                = Raw
*CLASS               = PoleFig
*SAMPLE              =
*COMMENT             = Export from Riga
*FNAME               =
*DATE                =
*GROUP_COUNT         = 1
*PF_PCOUNT           = 1, 91
*PF_ASTART           = 1, 0.0000
*PF_ASTOP            = 1, 90.0000
*PF_ASTEP            = 1, 1.0000

*BEGIN
*GROUP               = 0
*START               = 0.0000
*STOP                = 360.0000
*STEP                = 1.0000
*OFFSET              = 0.0
*SPEED               = 60.0000
*FULL_SCALE          = 1000
*PF_ANGLE            = 0.0000
*PF_BANGLE           = 0.0000
*INDEX               = 1 1 1
*COUNT               = 361
0.00 , 0.00 , 0.00 , 0.00
0.00 , 0.00 , 0.00 , 0.00
0.00 , 0.00 , 0.00 , 0.00
```

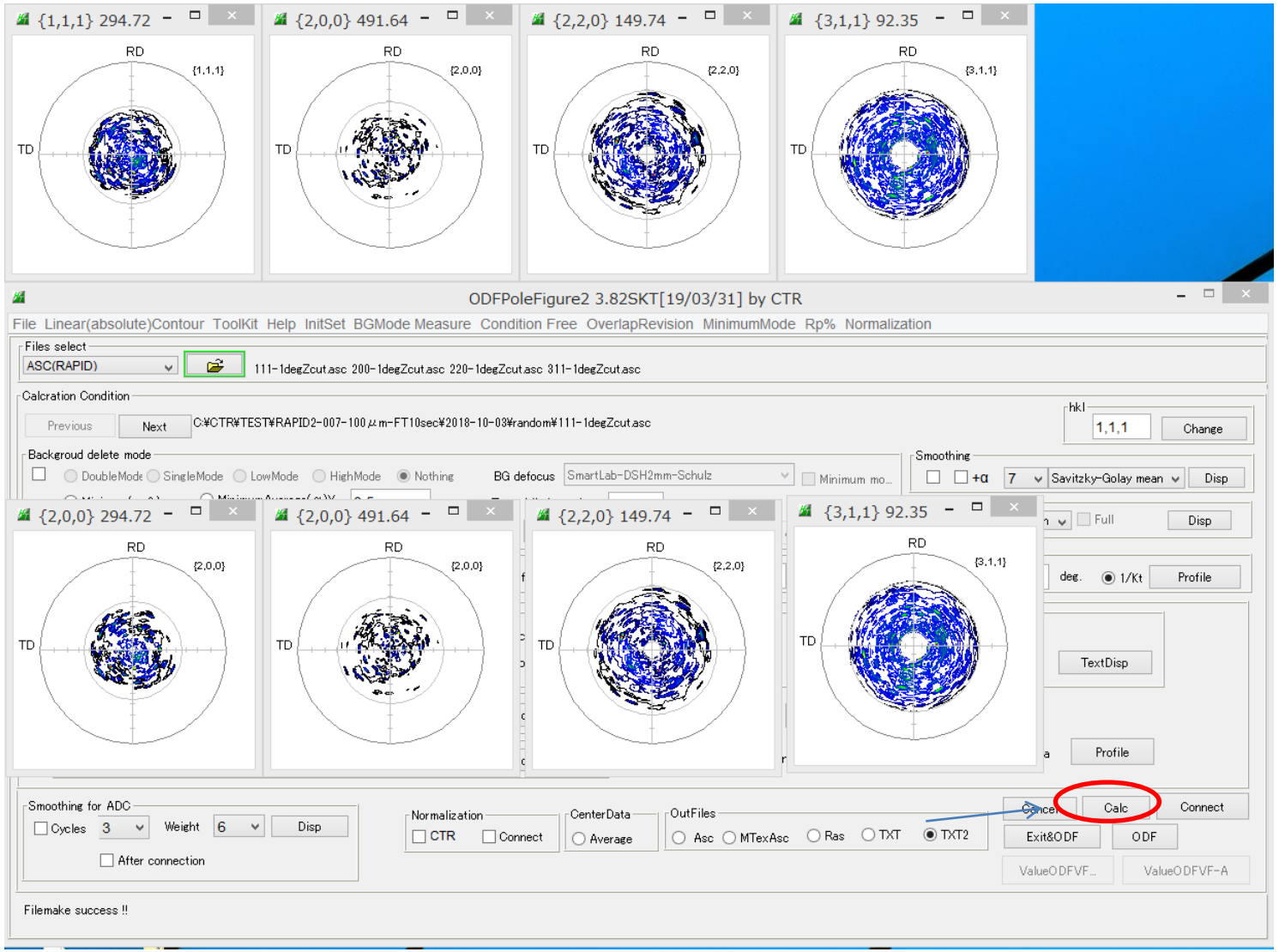
ファイル先頭は指数から始まる。
1degデータを用いてdefocus曲線を作成し
5degデータで極点処理を行う

randomファイル処理(入力データの確認)



測定されていない領域をCutモード

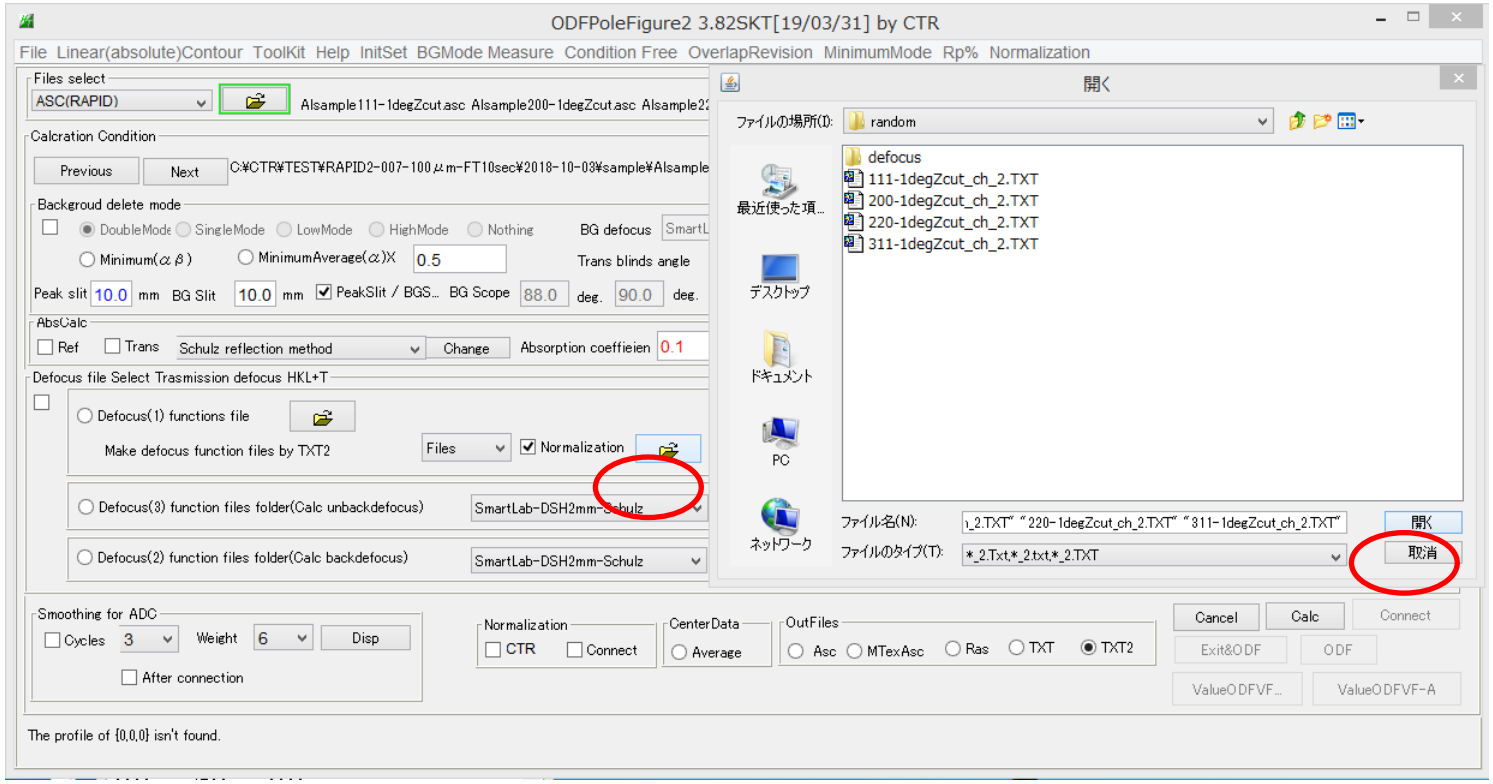
randomファイル処理(TXT2作成）



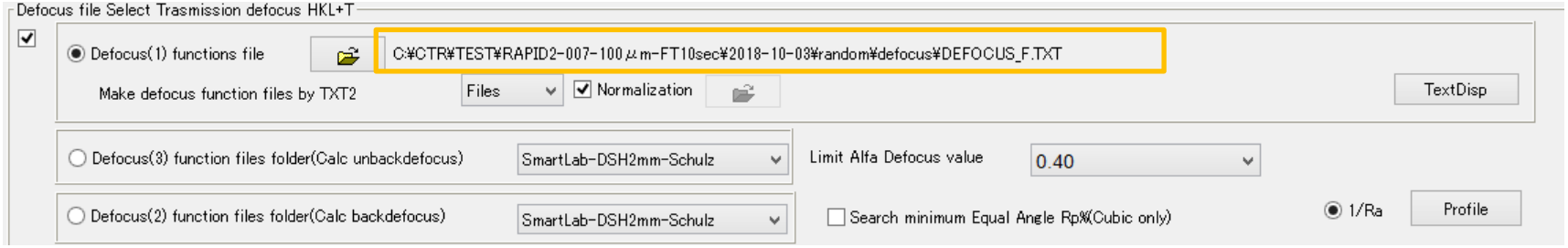
randomファイル処理(TXT2ファイルの確認）

ZCutで測定されていない領域が削除される。

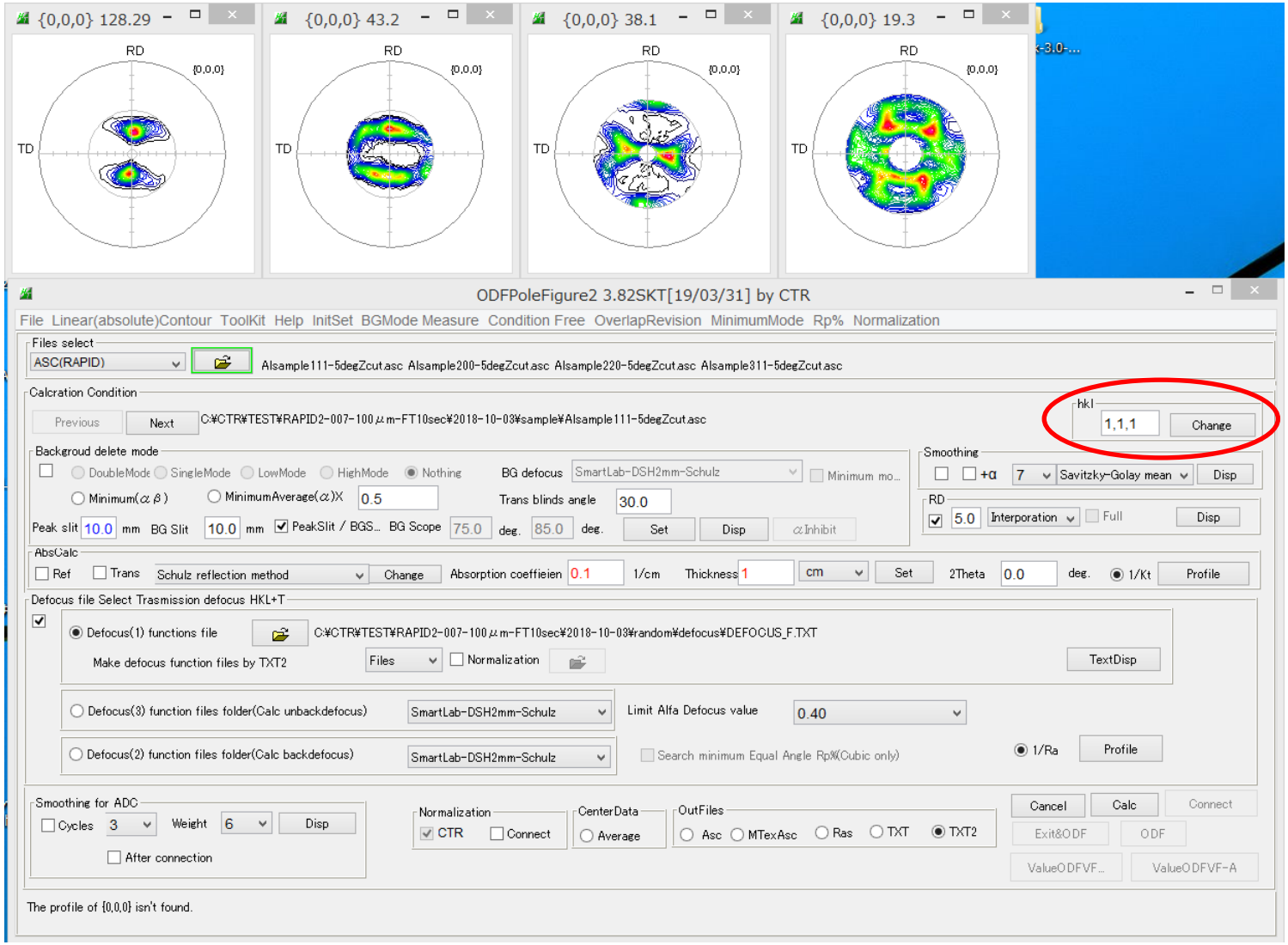
randomファイル処理(TXT2の登録）



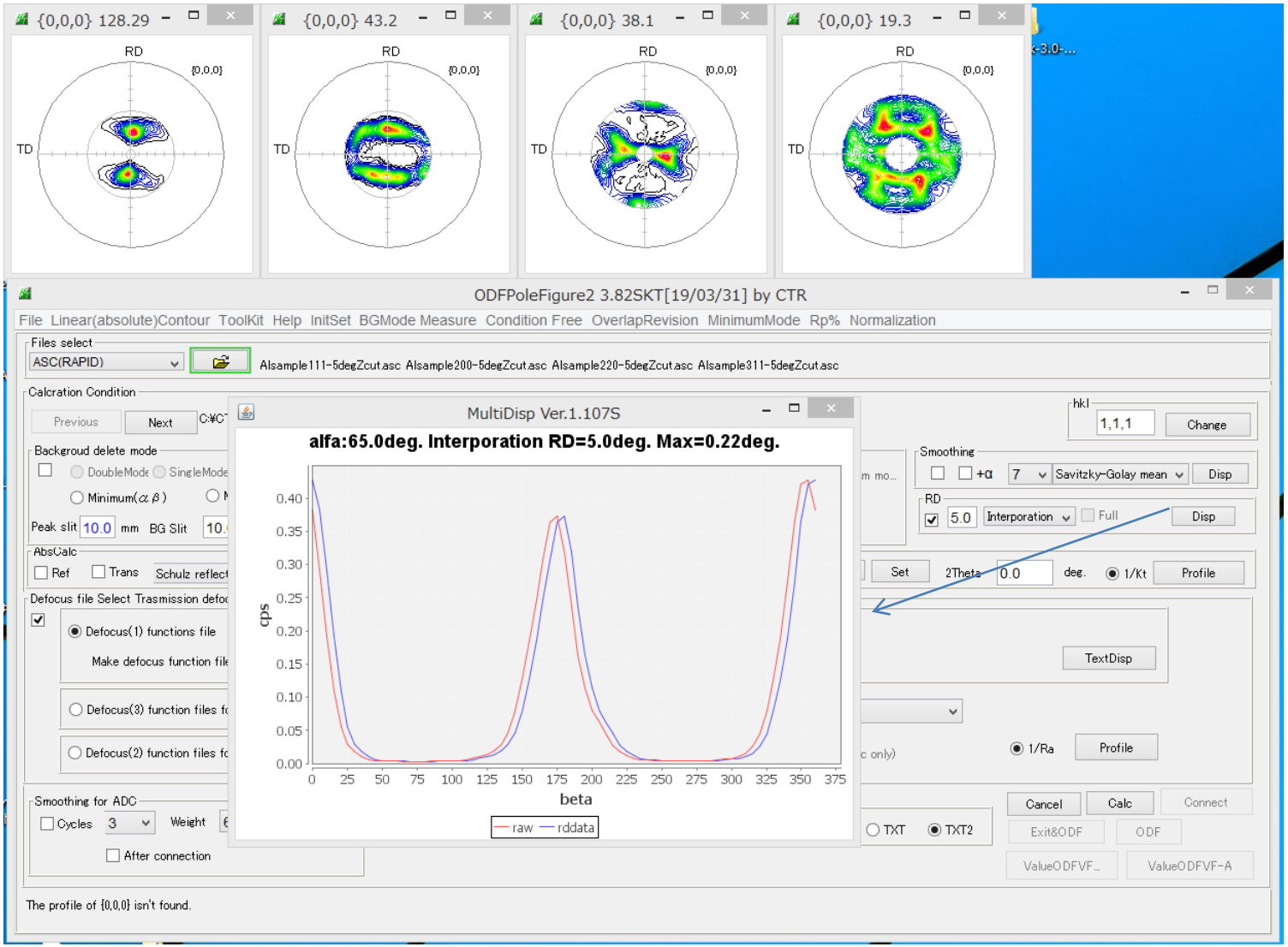
TXT2ファイルを登録する



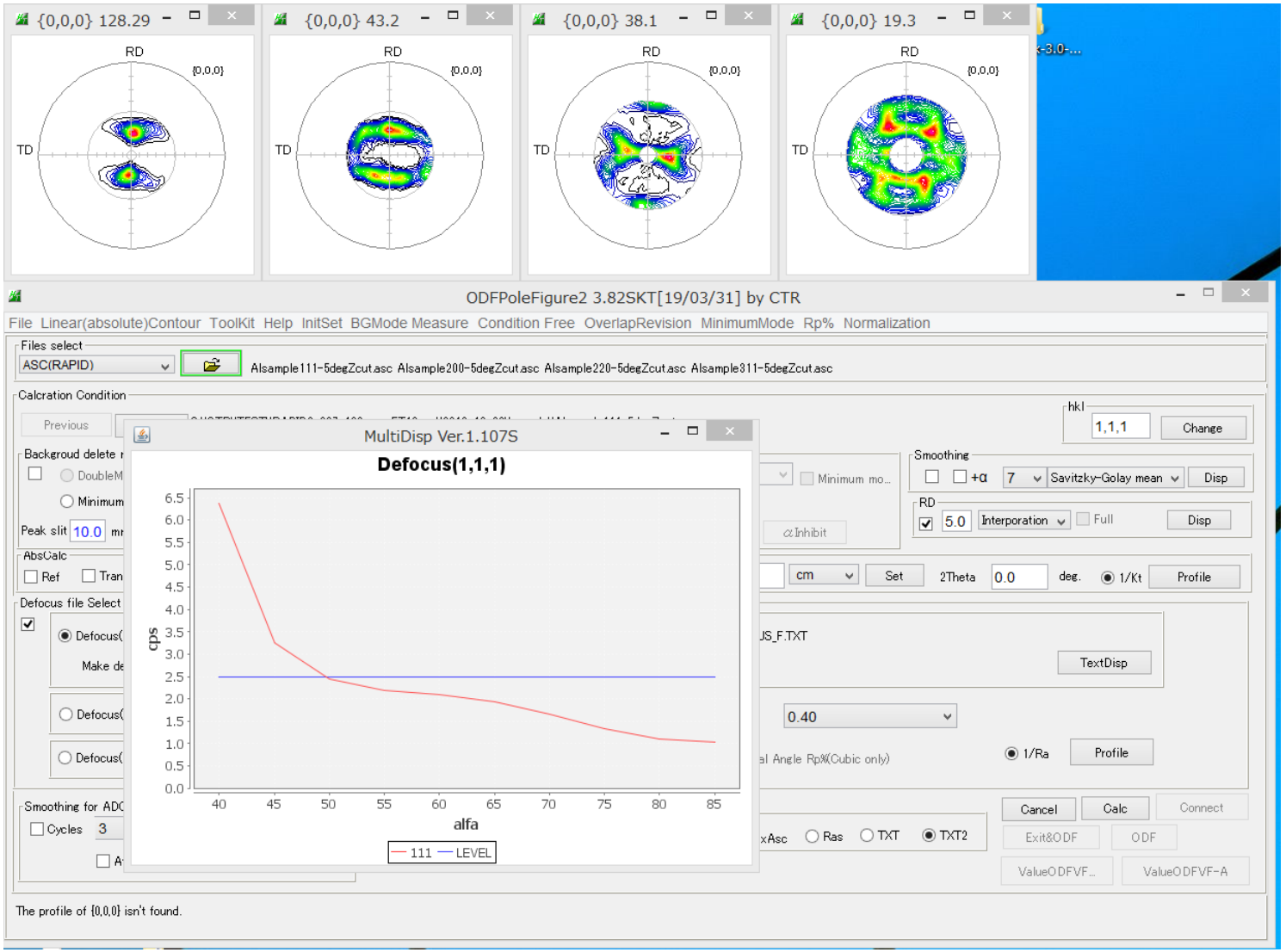
Sample処理(指数の確認と登録）



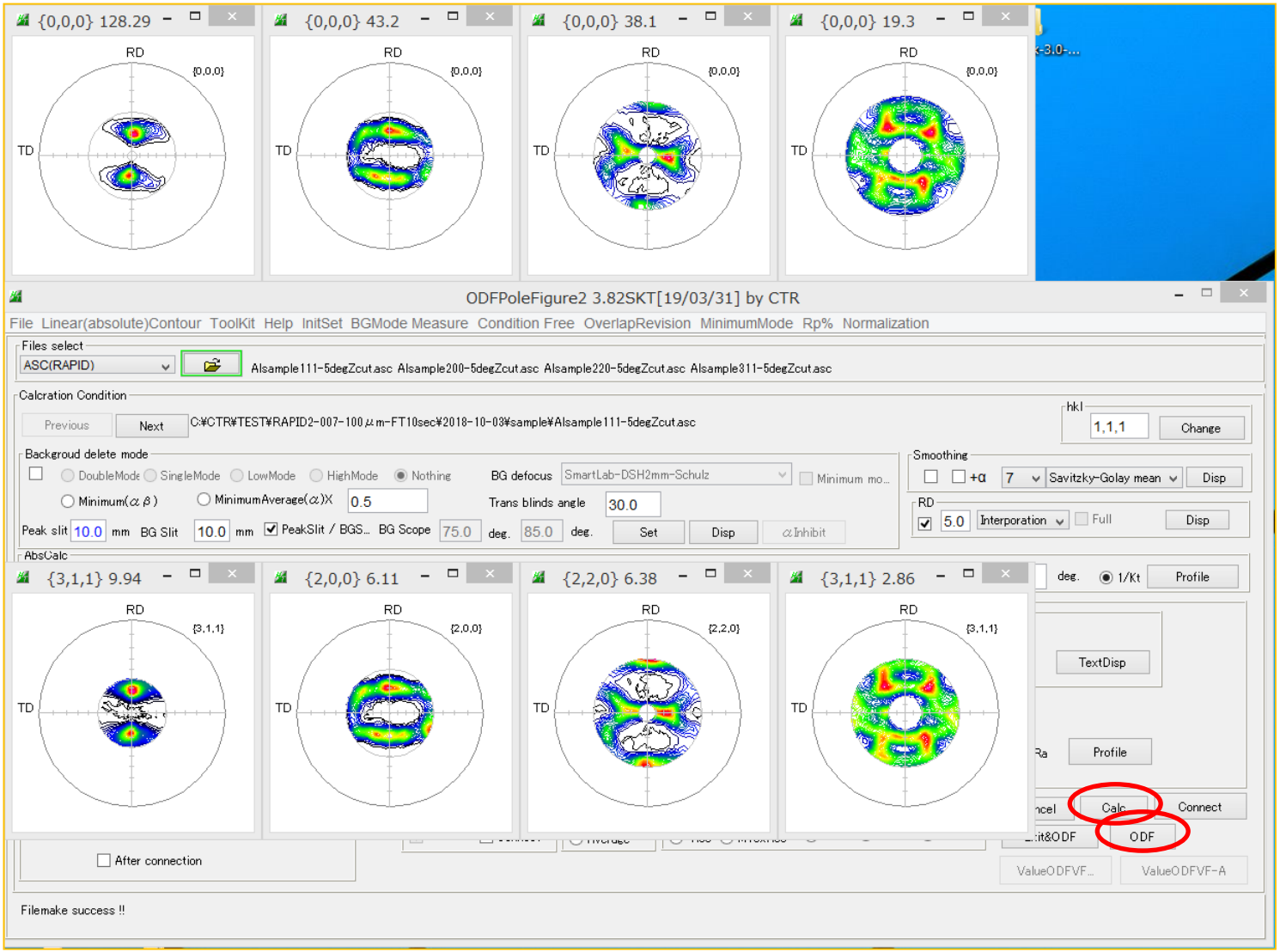
Sample処理(RDの確認）



Sample処理(random補正量の指定）

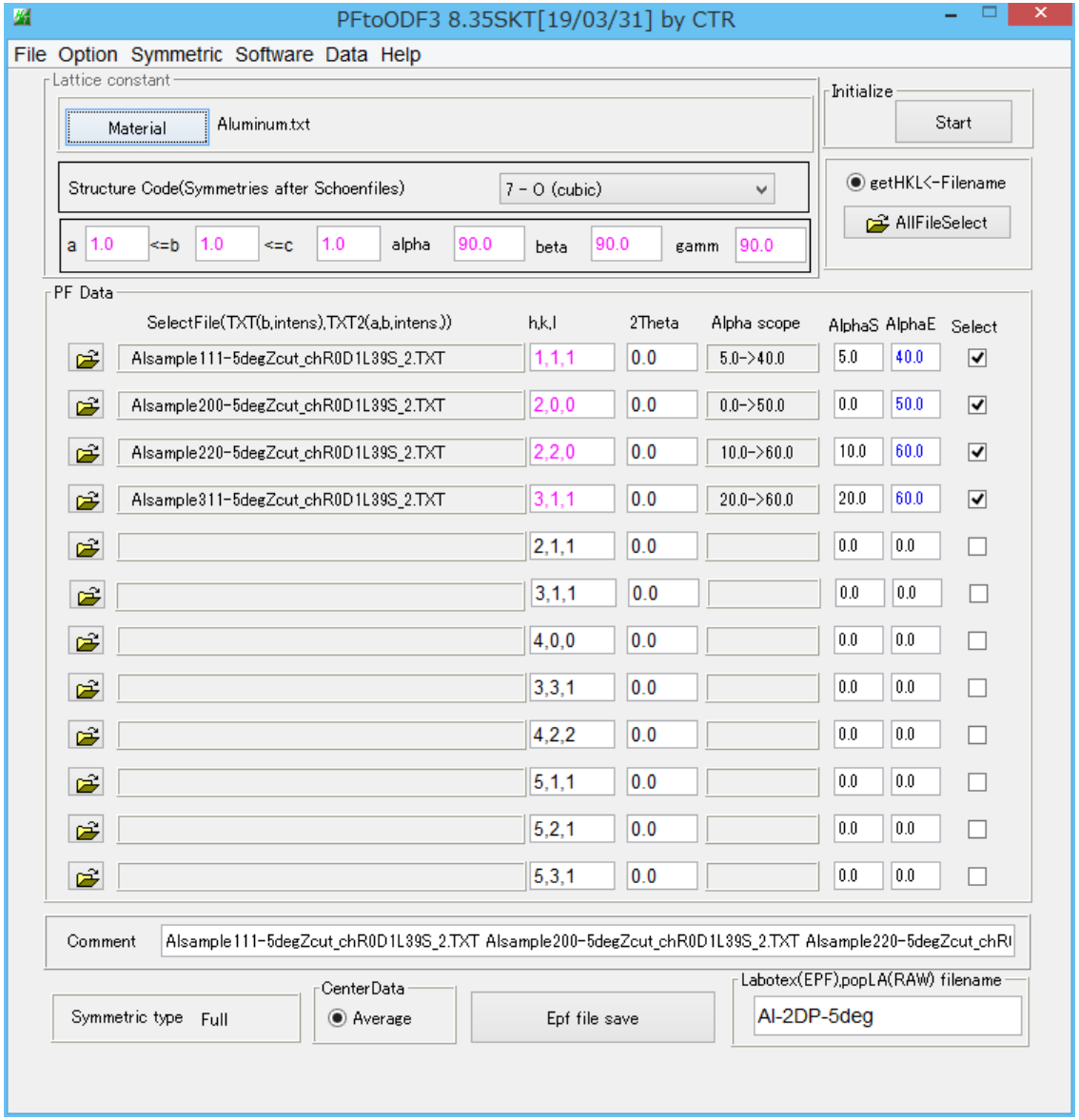


Sample処理

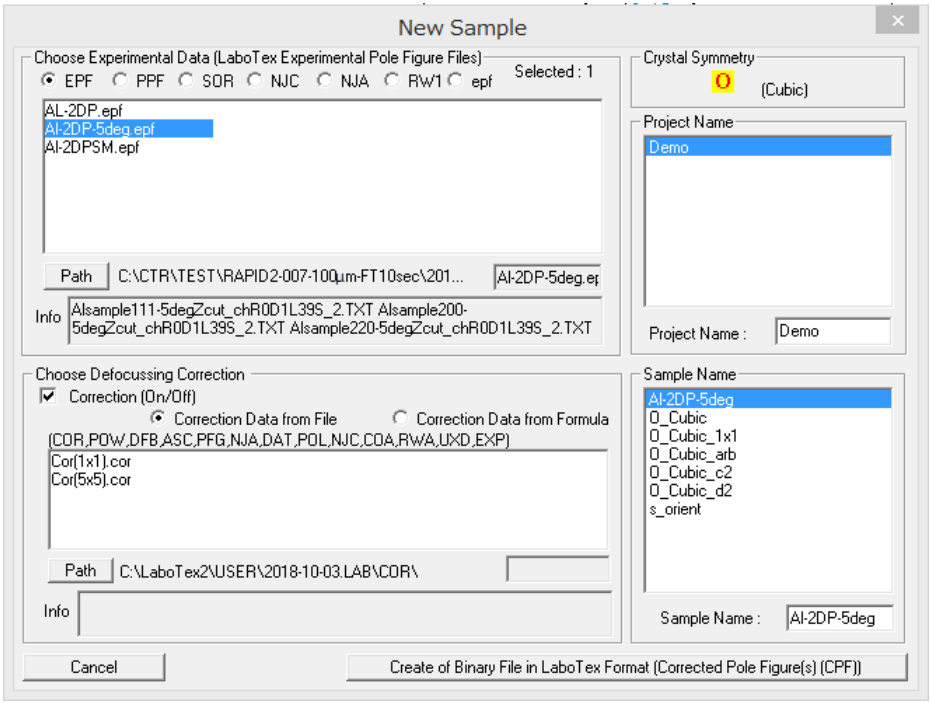


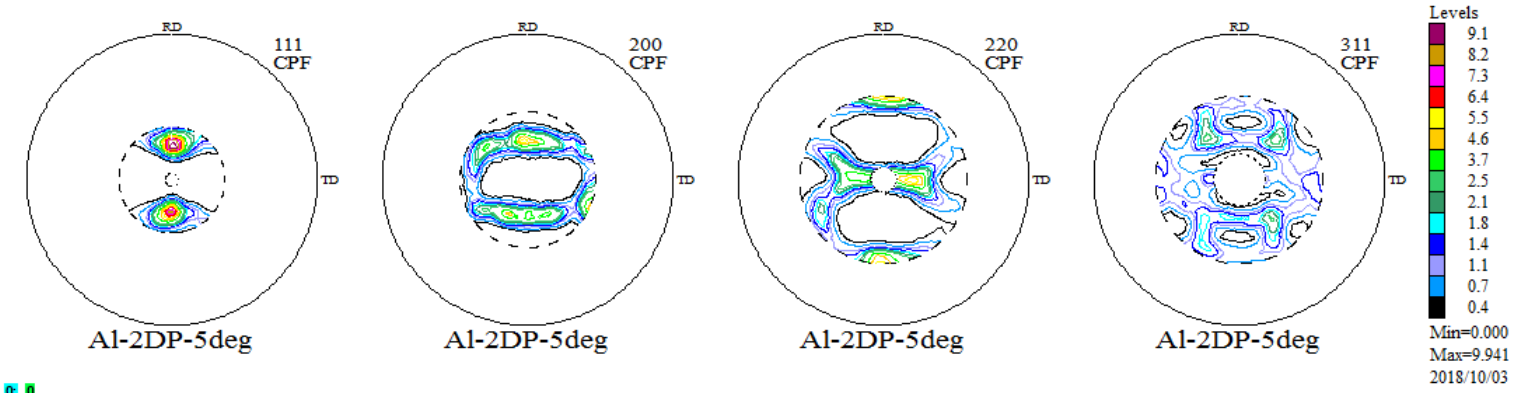
ODF向けファイル作成

ODFファイル作成

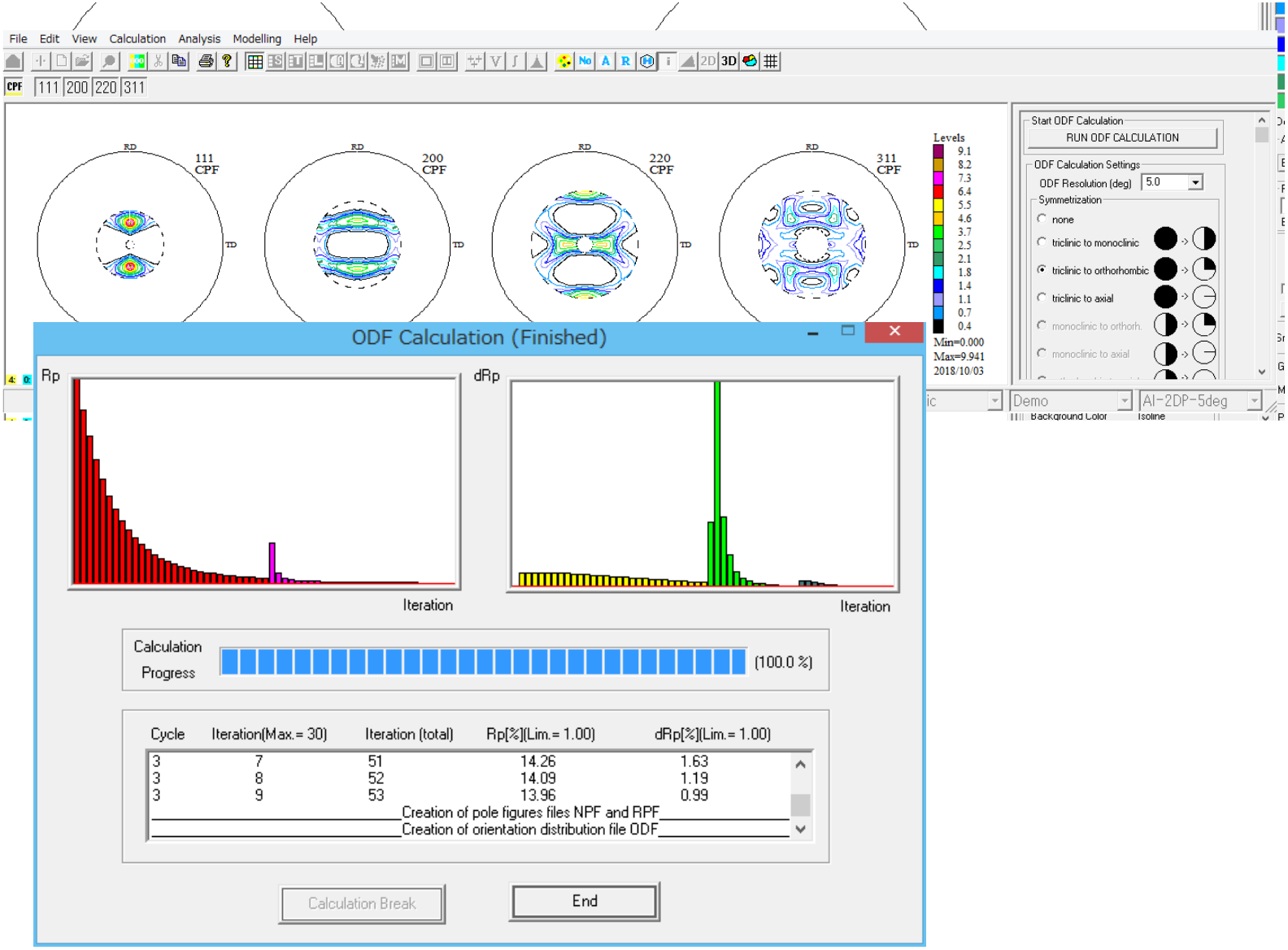

PFtoODF3 8.35SKT[19/03/31] by CTR
File Option Symmetric Software Data Help
Lattice constant
Material
Aluminum.txt
Initialize
Start
Structure Code(Symmetries after Schoenfiles)
7 - O (cubic)
getHKL<-Filename
AllFileSelect
a 1.0 <=b 1.0 <=c 1.0 alpha 90.0 beta 90.0 gamm 90.0
PF Data
SelectFile(TXT(b,intens),TXT2(a,b,intens))
h,k,l
2Theta
Alpha scope
AlphaS
AlphaE
Select
Alsample111-5degZcut_chR0D1L39S_2.TXT 1,1,1 0.0 5.0->40.0 5.0 40.0
Alsample200-5degZcut_chR0D1L39S_2.TXT 2,0,0 0.0 0.0->50.0 0.0 50.0
Alsample220-5degZcut_chR0D1L39S_2.TXT 2,2,0 0.0 10.0->60.0 10.0 60.0
Alsample311-5degZcut_chR0D1L39S_2.TXT 3,1,1 0.0 20.0->60.0 20.0 60.0
2,1,1 0.0 0.0 0.0
3,1,1 0.0 0.0 0.0
4,0,0 0.0 0.0 0.0
3,3,1 0.0 0.0 0.0
4,2,2 0.0 0.0 0.0
5,1,1 0.0 0.0 0.0
5,2,1 0.0 0.0 0.0
5,3,1 0.0 0.0 0.0
Comment
Alsample111-5degZcut_chR0D1L39S_2.TXT Alsample200-5degZcut_chR0D1L39S_2.TXT Alsample220-5degZcut_chR
Symmetric type Full
CenterData
Average
Epf file save
Labotex(EPF),popLA(RAW) filename
Al-2DP-5deg

LaboTexで読み込み

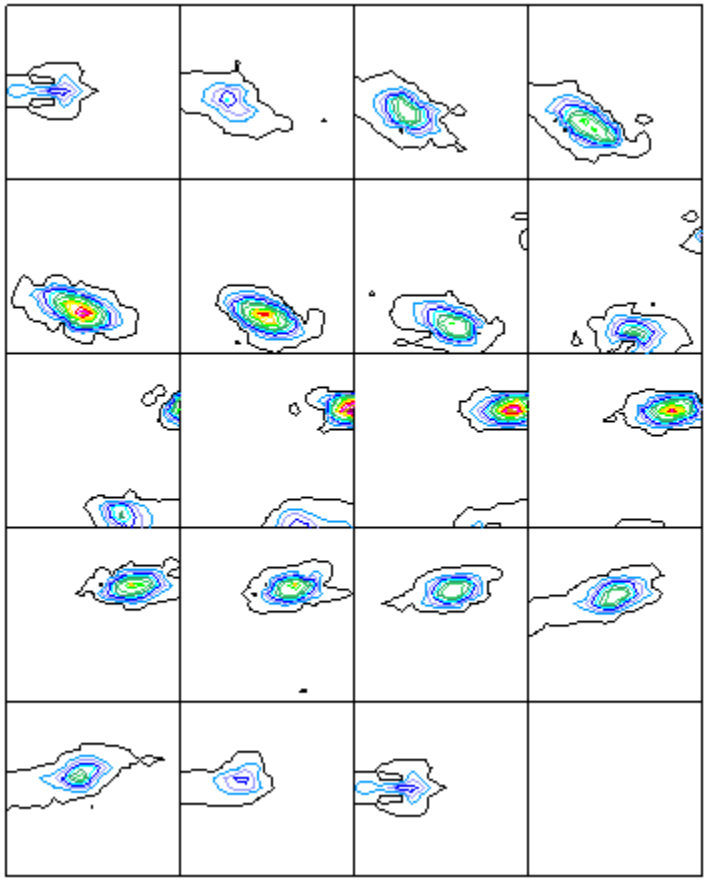


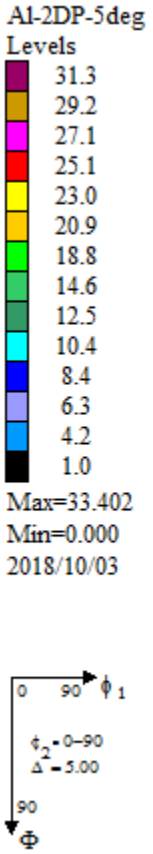


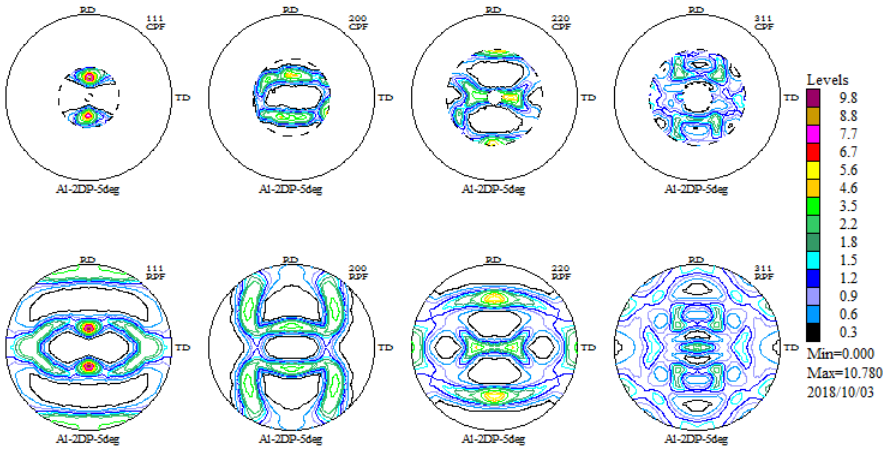
ODF計算


File Edit View Calculation Analysis Modelling Help
CPF 111 200 220 311
RD
111 CPF
200 CPF
220 CPF
311 CPF
TD
Levels
9.1
8.2
7.3
6.4
5.5
4.6
3.7
2.5
2.1
1.8
1.4
1.1
0.7
0.4
Min=0.000
Max=9.941
2018/10/03
Start ODF Calculation
RUN ODF CALCULATION
ODF Calculation Settings
ODF Resolution (deg) 5.0
Symmetrization
none
triclinic to monoclinic
triclinic to orthorhombic
triclinic to axial
monoclinic to orthorh.
monoclinic to axial
Demo
Al-2DP-5deg
Background Color
Isoline
ODF Calculation (Finished)
Rp
dRp
Iteration
Iteration
Calculation Progress
(100.0 %)
Cycle Iteration(Max.= 30) Iteration (total) Rp[%](Lim.= 1.00) dRp[%](Lim.= 1.00)
3 7 51 14.26 1.63
3 8 52 14.09 1.19
3 9 53 13.96 0.99
Creation of pole figures files NPF and RPF
Creation of orientation distribution file ODF
Calculation Break
End

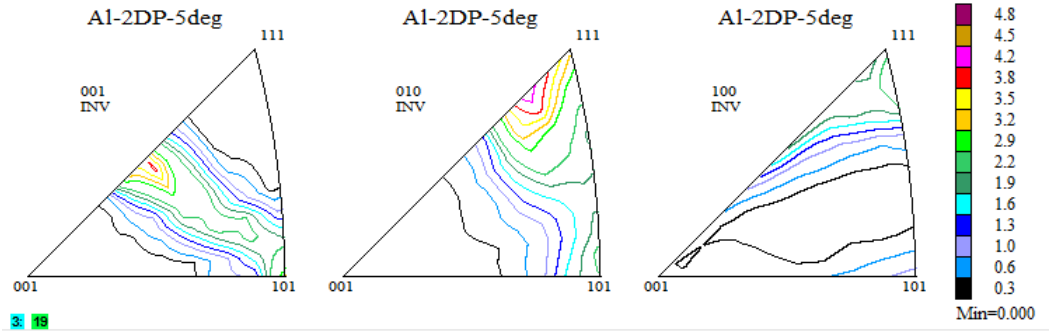
ODF計算結果



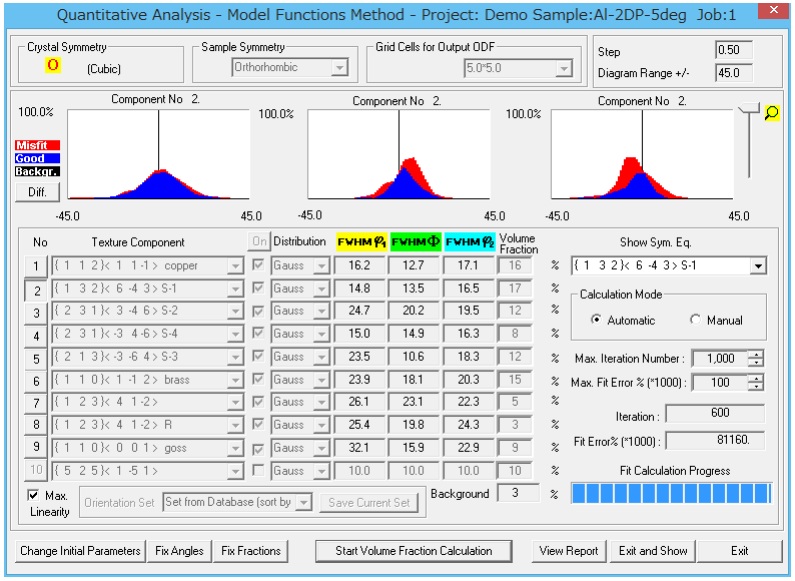

Al-2DP-5deg
Levels
31.3
29.2
27.1
25.1
23.0
20.9
18.8
14.6
12.5
10.4
8.4
6.3
4.2
1.0
Max=33.402
Min=0.000
2018/10/03

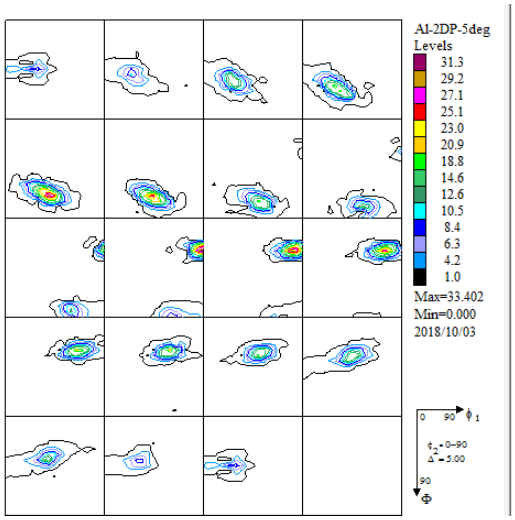

RD
TD
111 CPF
200 CPF
220 CPF
311 CPF
111 DPF
200 DPF
220 DPF
311 DPF
Al-2DP-5deg
Levels
9.8
8.8
7.7
6.7
5.6
4.6
3.5
2.2
1.8
1.5
1.2
0.9
0.6
0.3
Min=0.000
Max=10.780
2018/10/03

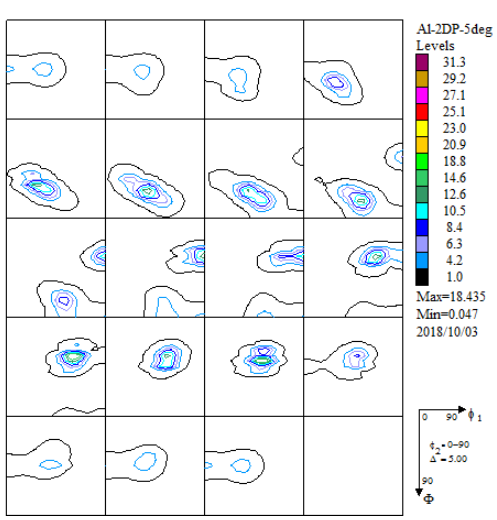
0
90
ϕ_1
ϕ_2 = 0–90
Δ = 5.00
90
Φ


Al-2DP-5deg
111
001
INV
001
101
Al-2DP-5deg
111
010
INV
001
101
Al-2DP-5deg
111
100
INV
001
101
4.8
4.5
4.2
3.8
3.5
3.2
2.9
2.2
1.9
1.6
1.3
1.0
0.6
0.3
Min=0.000

結晶方位の定量

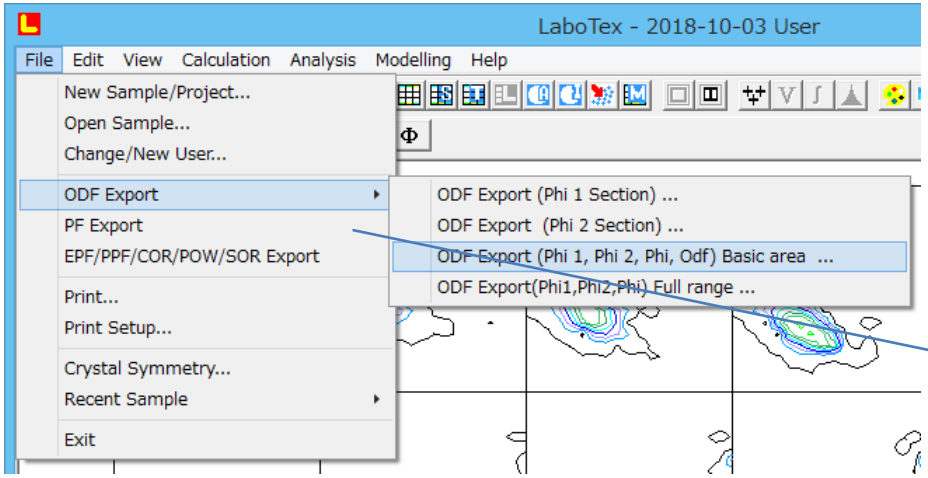




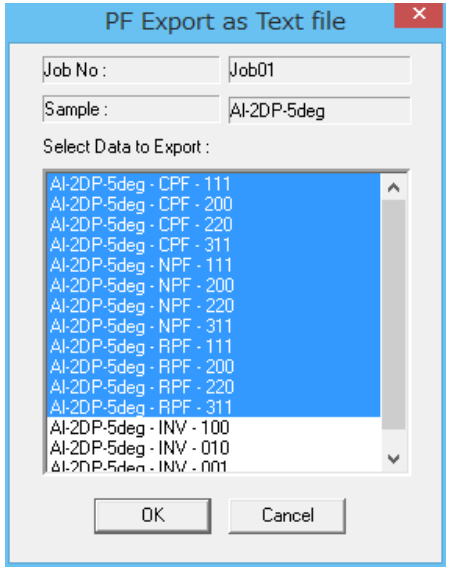


入力極点図から計算　VolimeFractionから計算

ODFのExport

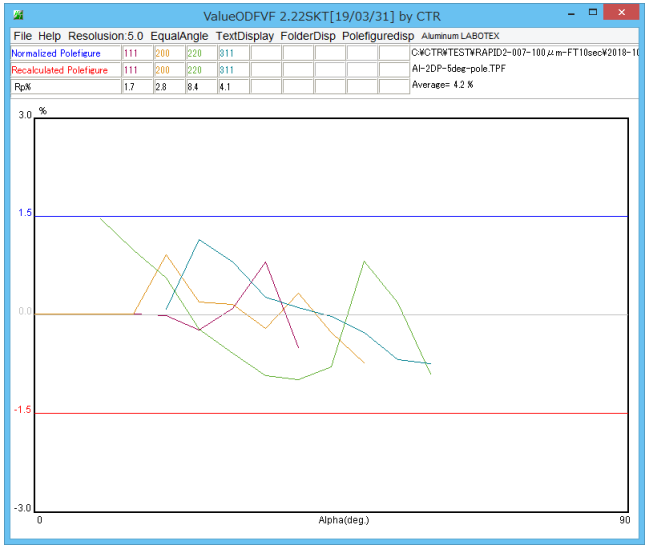


極点図のExport



CTRソフトウエア

Error評価



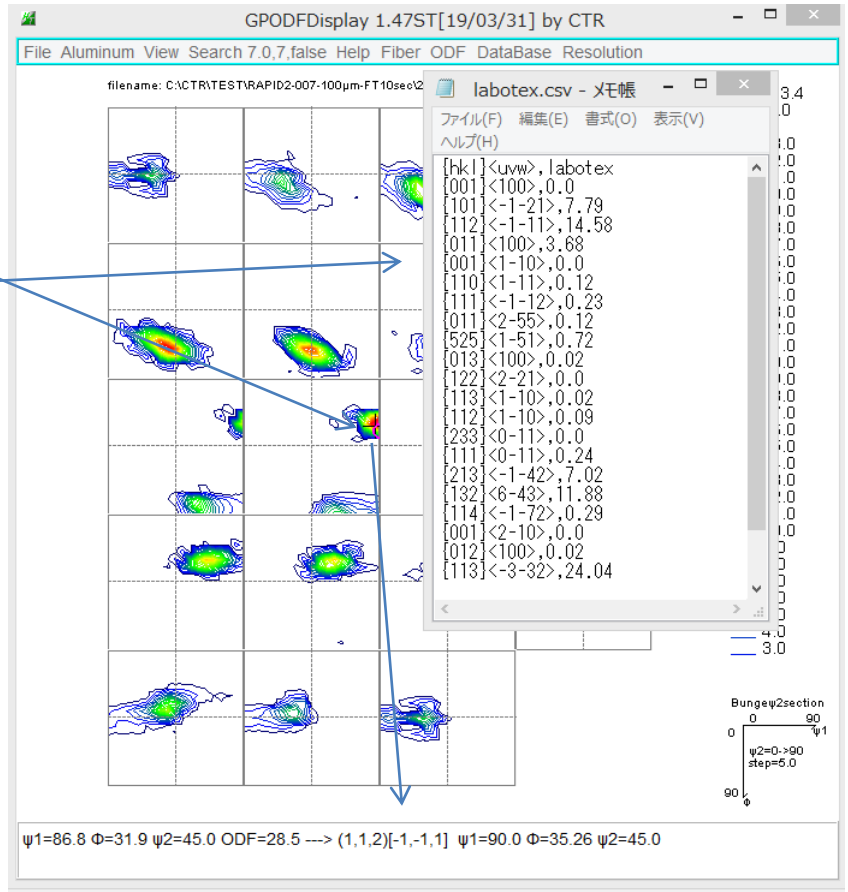
Normalized Polefigure	111	200	220	311
Recalculated Polefigure	111	200	220	311
Rp%	1.7	2.8	8.4	4.1

Al-2DP-5deg-pole.TPF

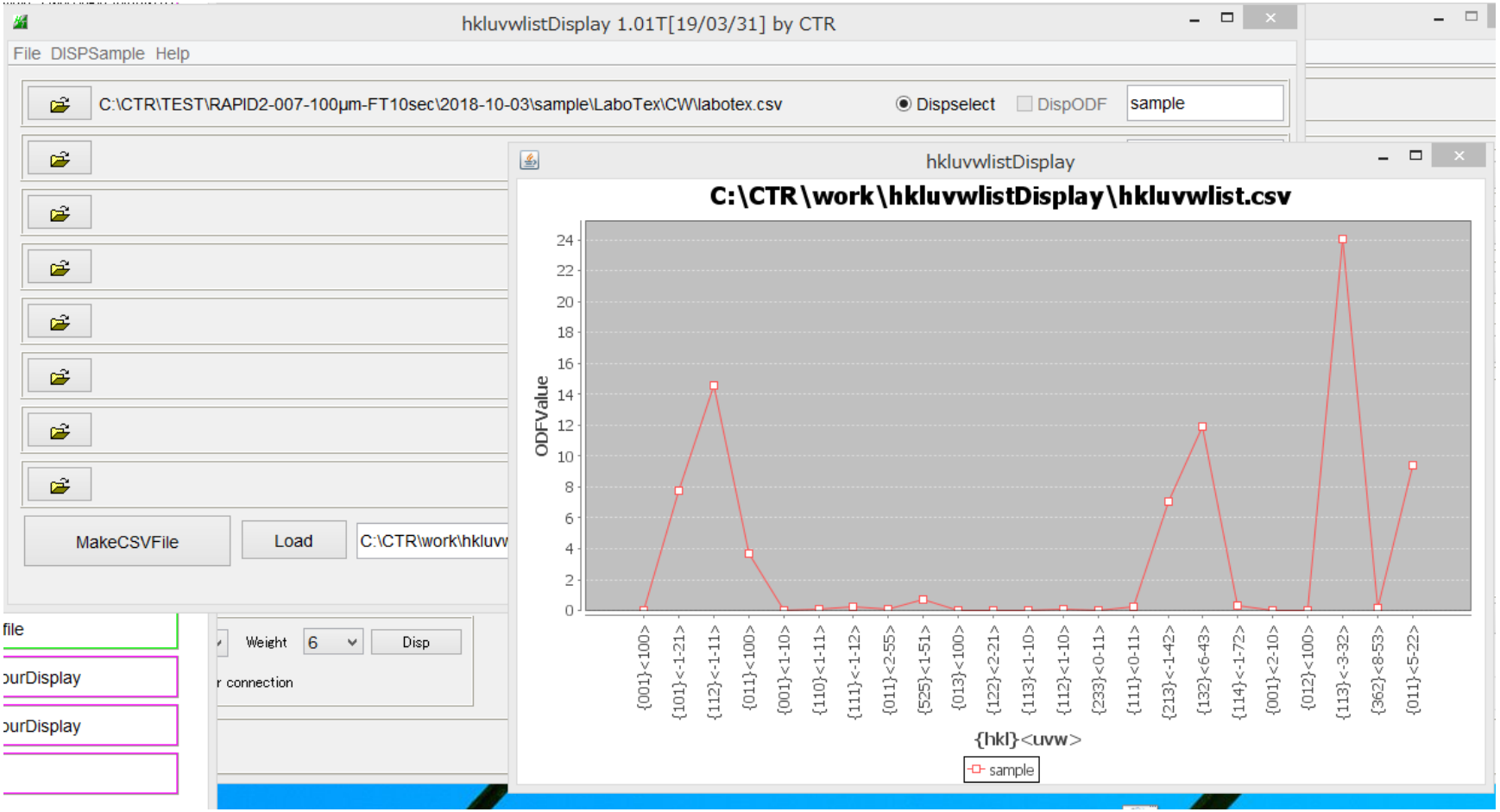
Average= 4.2 %

マウスカーソル位置の方位計算

指定された方位の密度計算

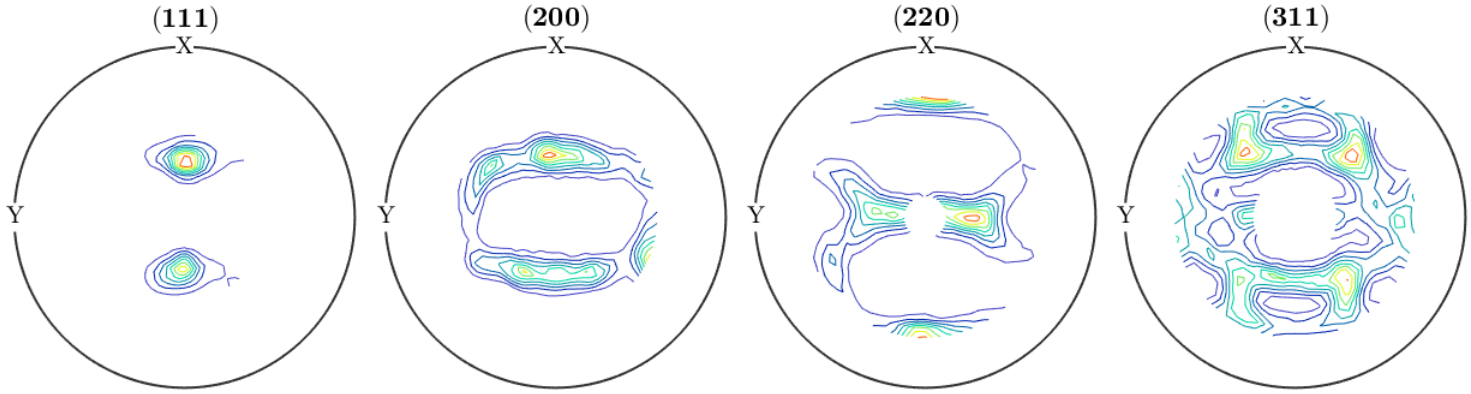


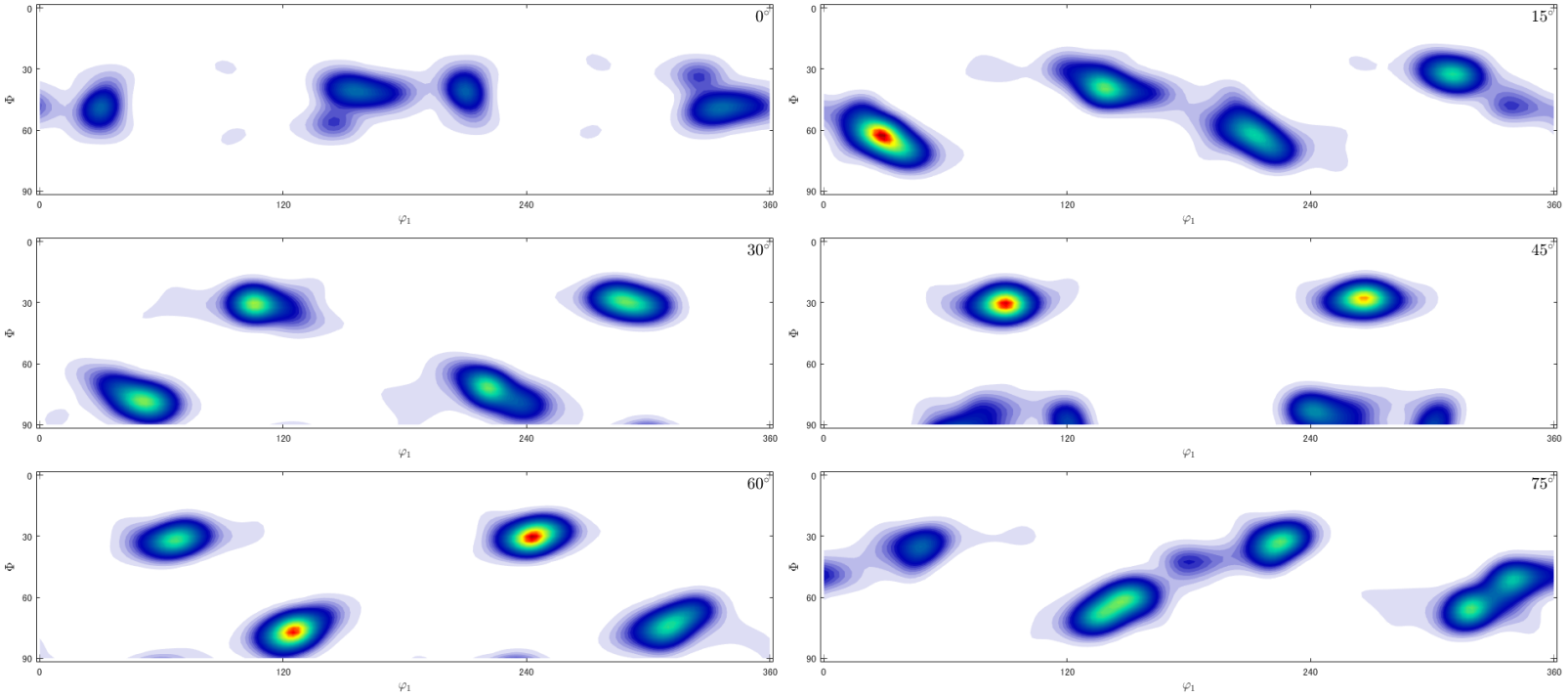
方位密度表現



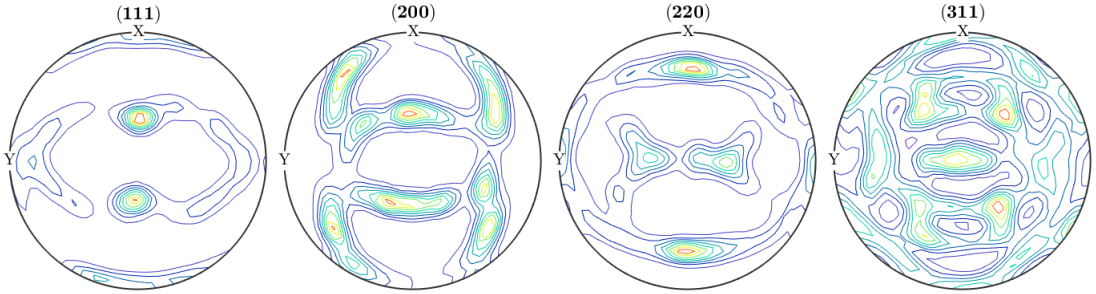
最大8個の方位密度比較が可能

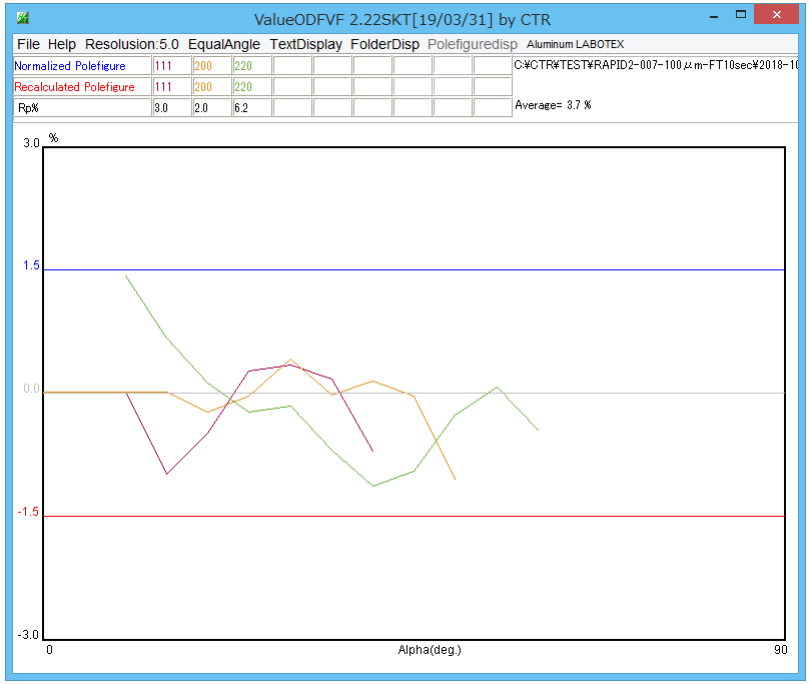
MTEX处理





MTEX処理（再計算極点図とError）

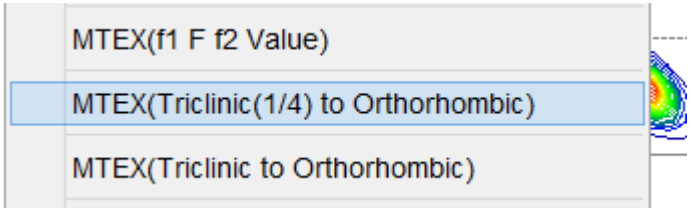


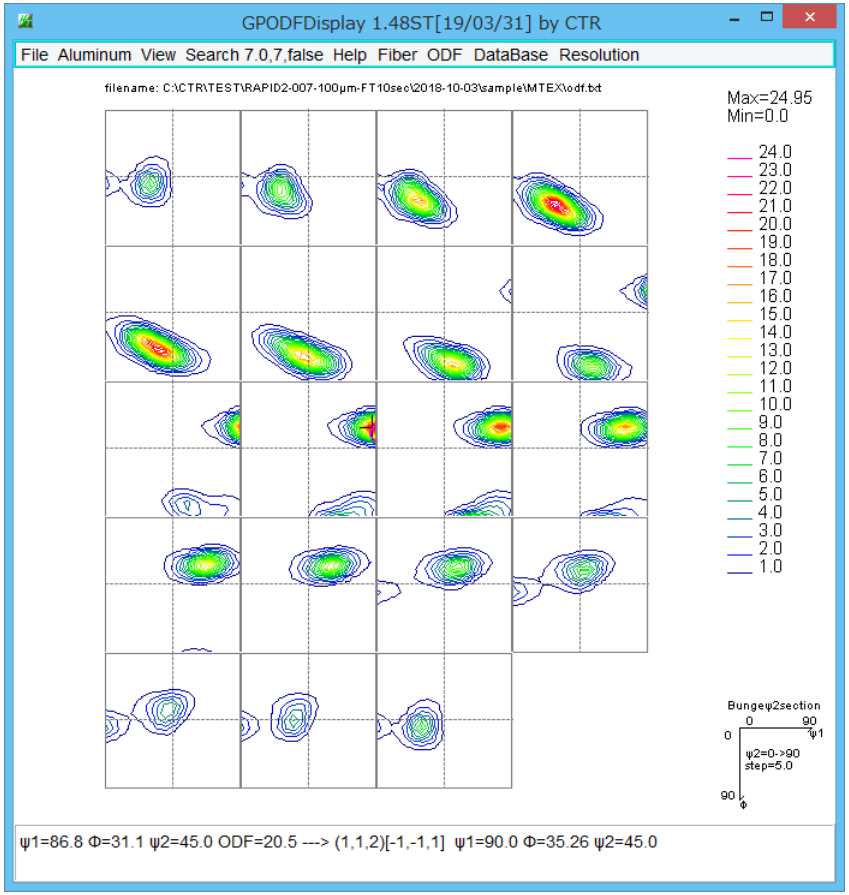


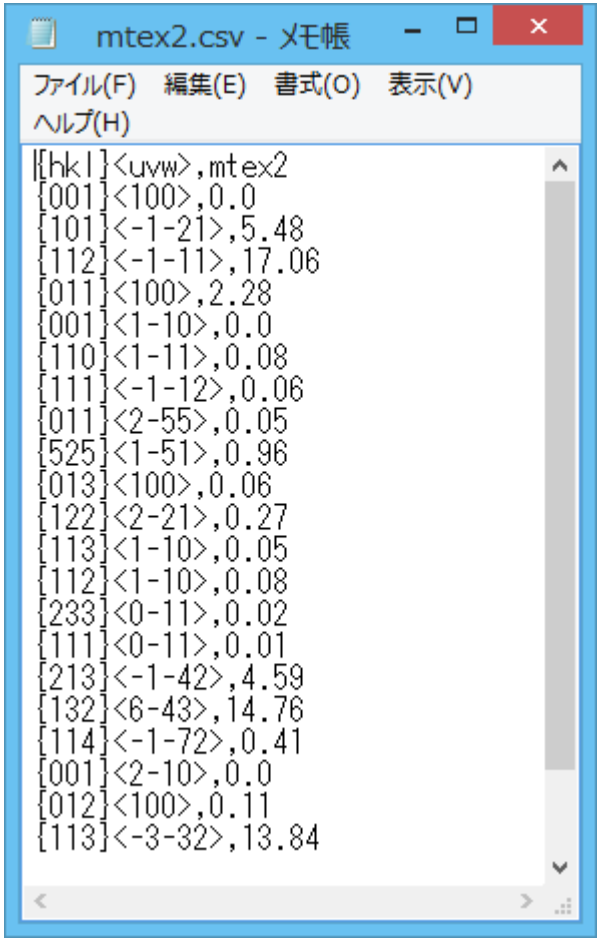
Normalized Polefigure	111	200	220
Recalculated Polefigure	111	200	220
Rp%	3.0	2.0	6.2

Average= 3.7 %

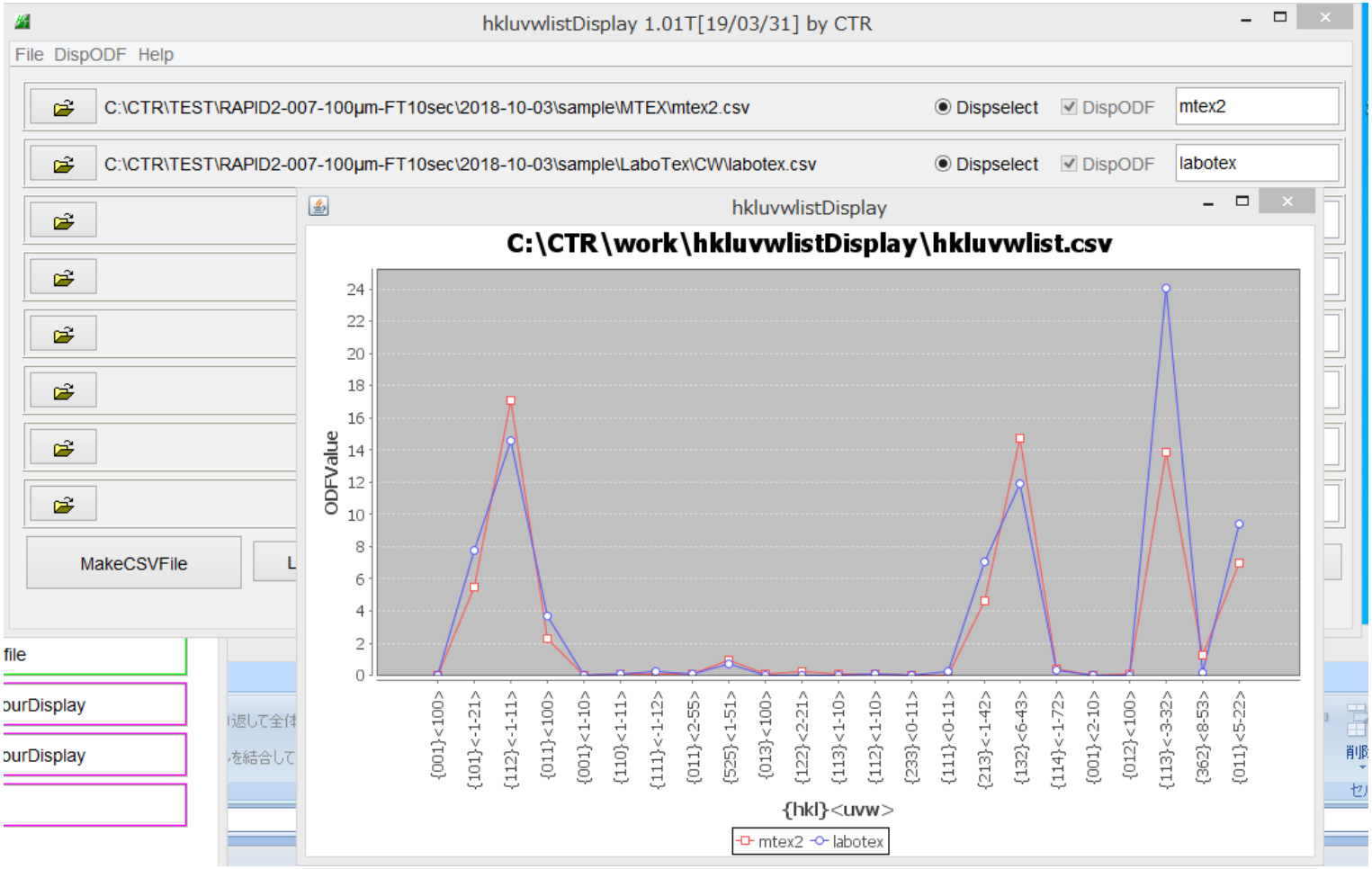
ExportODFをOrthorhombicで表示と方位密度





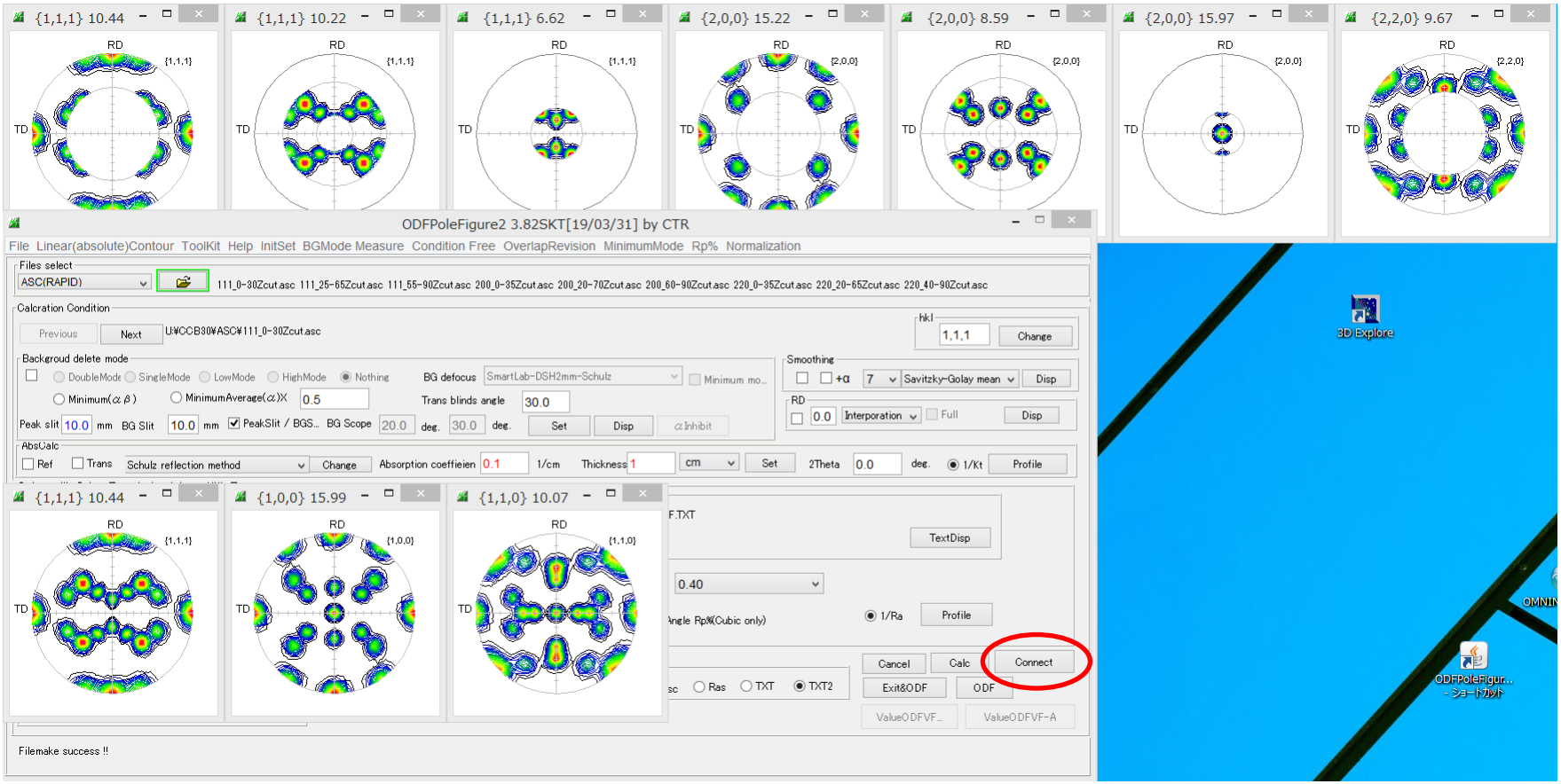


LaboTex-MTEX方位密度比較



方位密度はほぼ同一の結果が得られます。

同一反射の複数の極点図の場合



データの接続が可能になりました。