

反射極点図による

# MTEXポリエチレンの解析

2018年09月12日

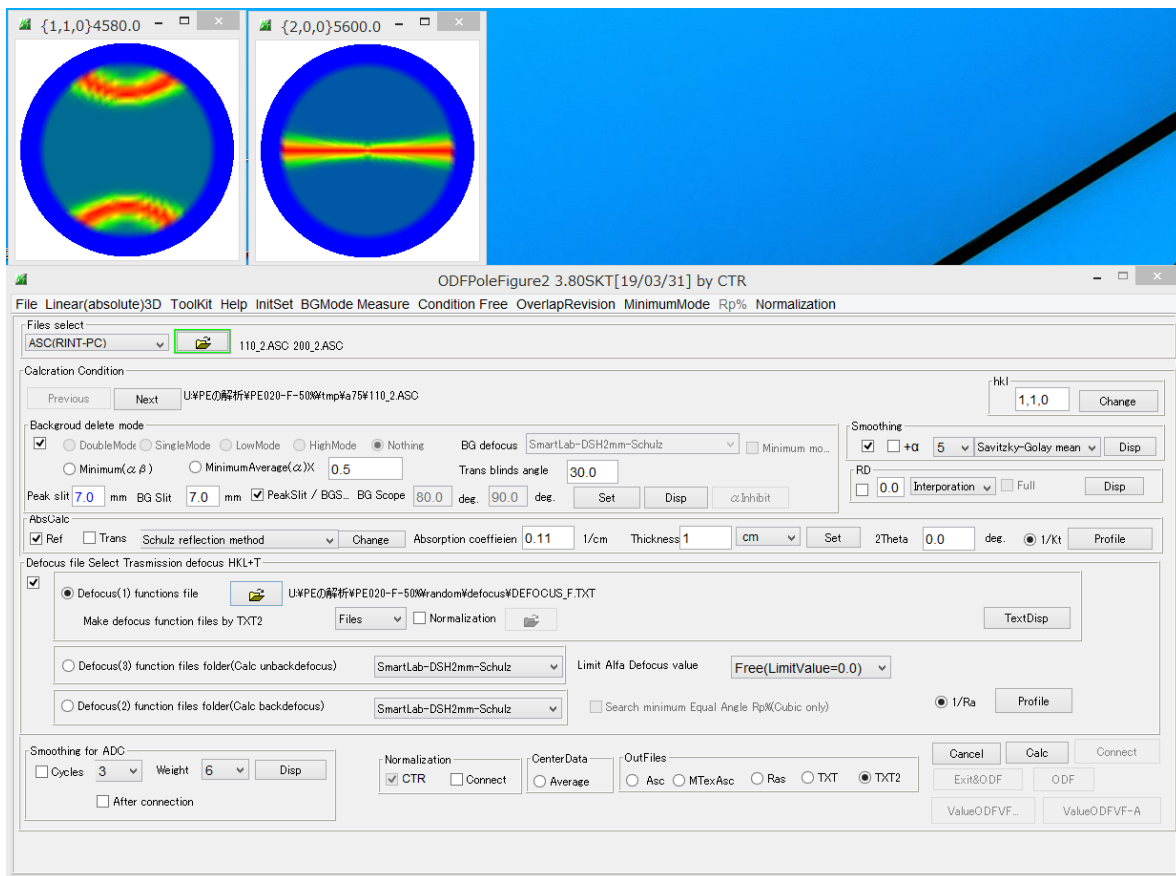
*HelperTex Office*

## 概要

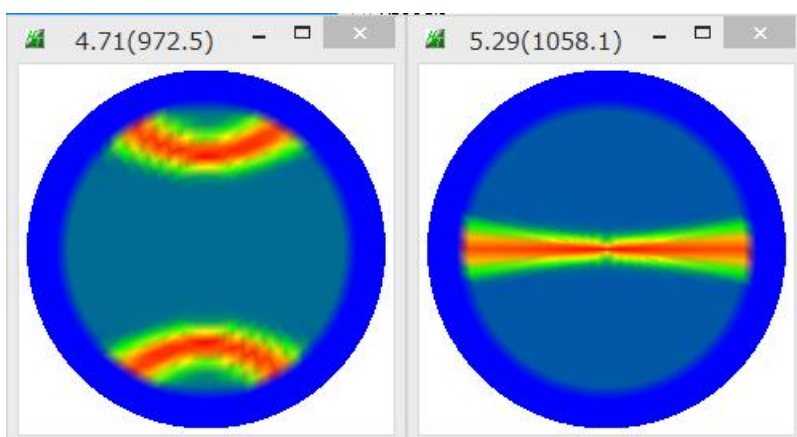
MTEXはMATLAB環境による無料のODF解析ソフトウェアである。

斜方晶であるポリエチレンの解析結果から、ND方向測定データからMD方向のODF、極点図を計算する。

測定データはn反射極点図

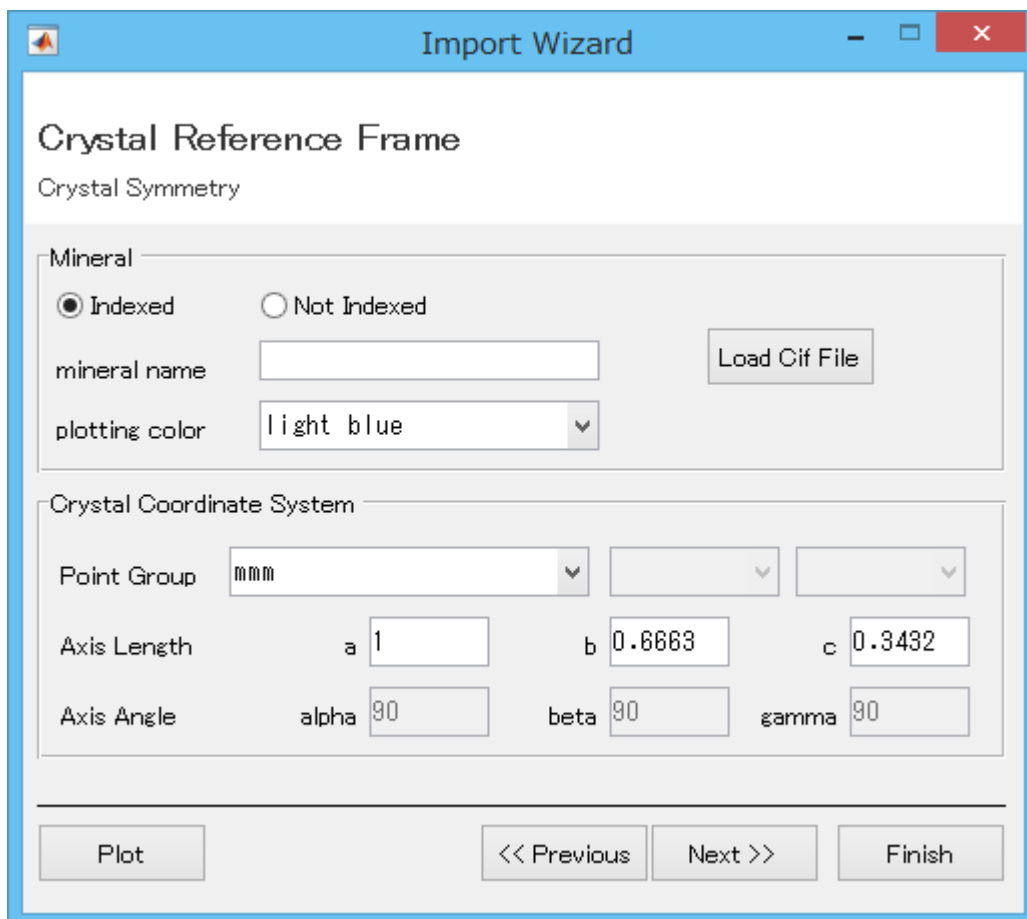
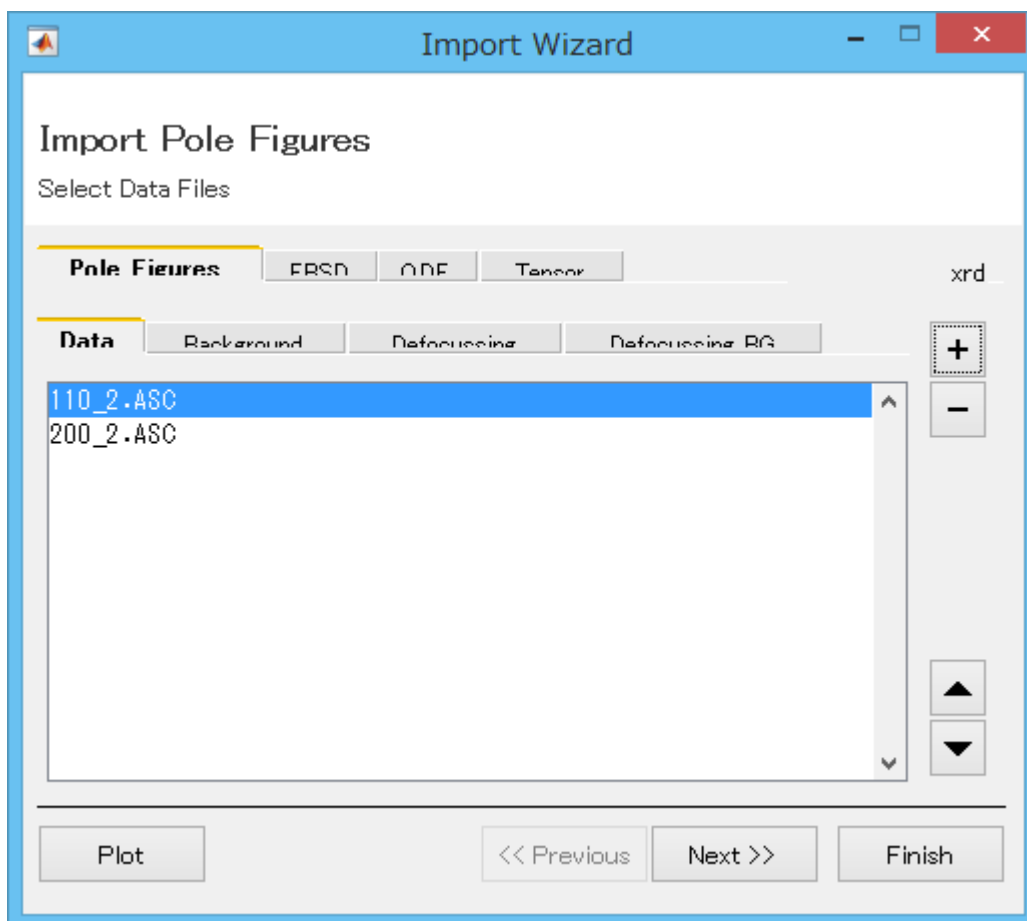


バックグラウンド除去、吸収補正、defocus補正を行う。

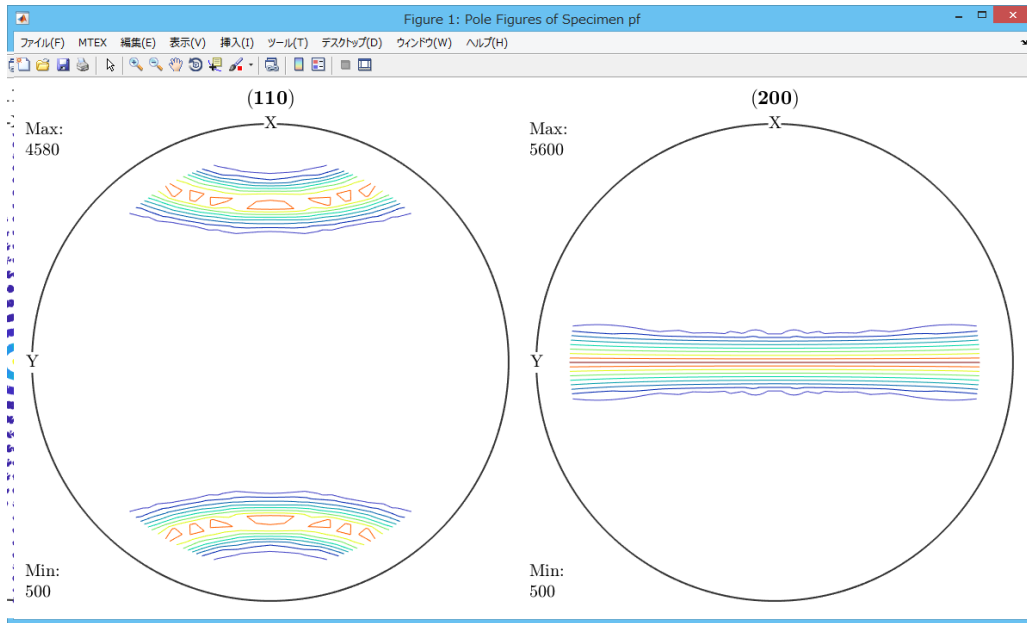


このデータからMTEXでODF解析を行う。

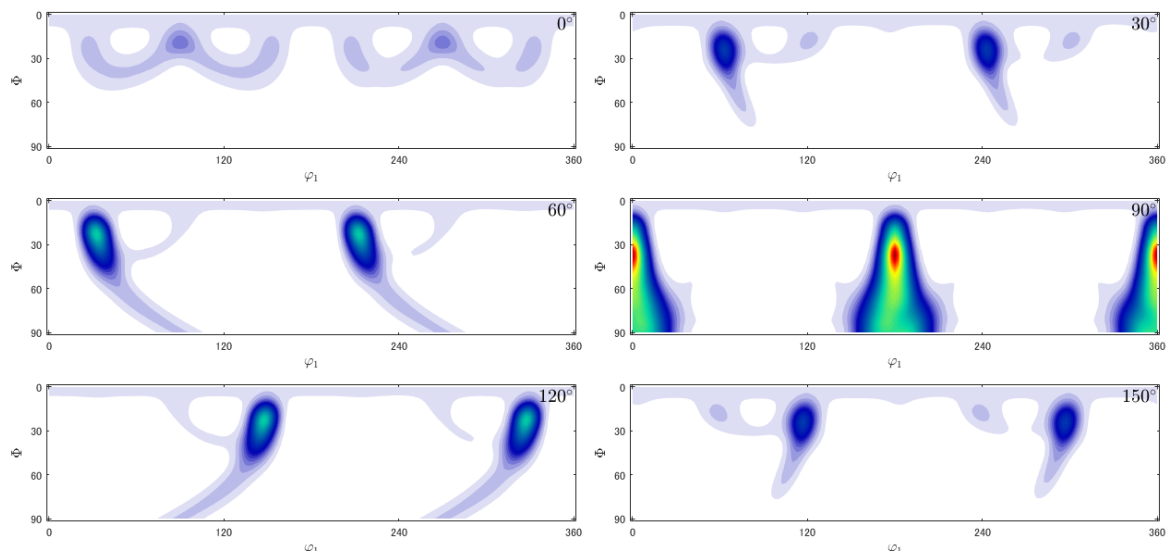
極点処理結果をASCファイルに変換し、MTEXに読み込む



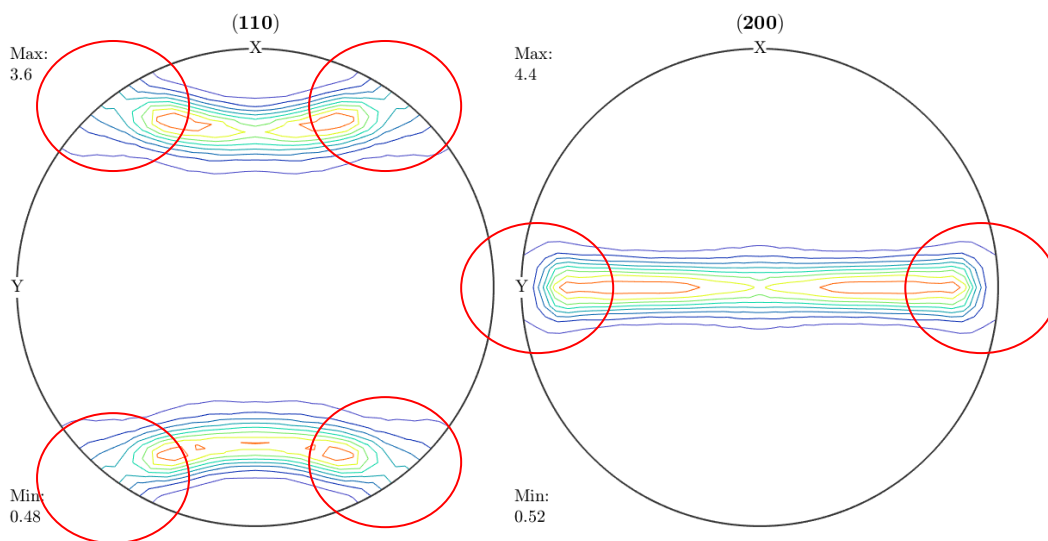
# MT EXに読み困れた3極点図



## ODF解析結果



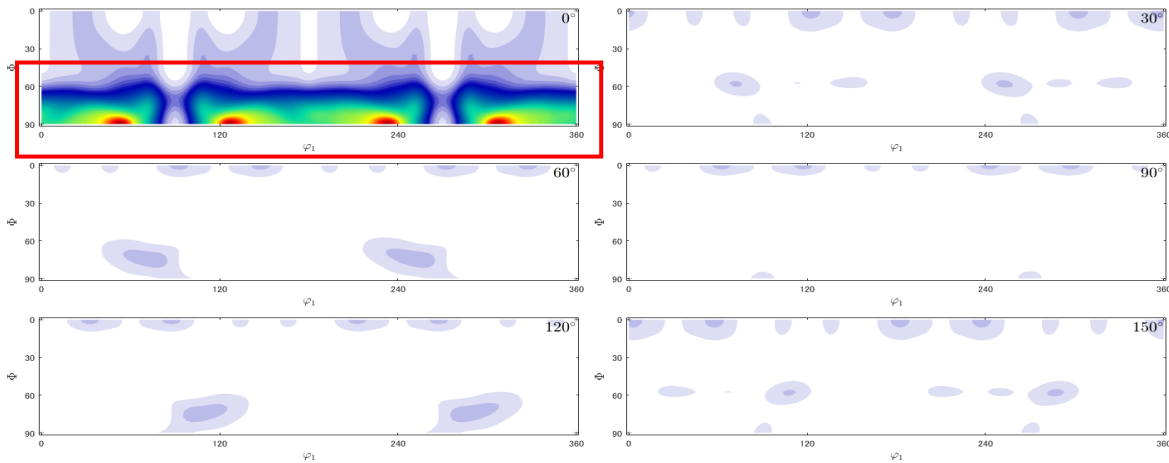
## 再計算極点図



反射法データのみでは再現できていない。

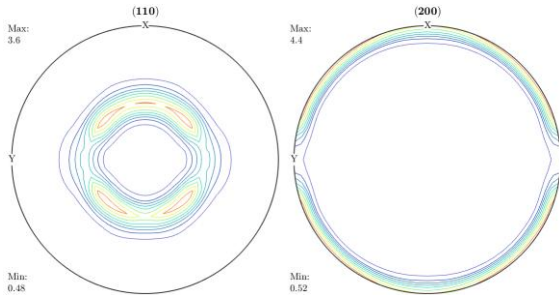
ND-MD変換

```
odfc=rotate(odf,rotation('axis',yvector,'angle',90*degree))
```

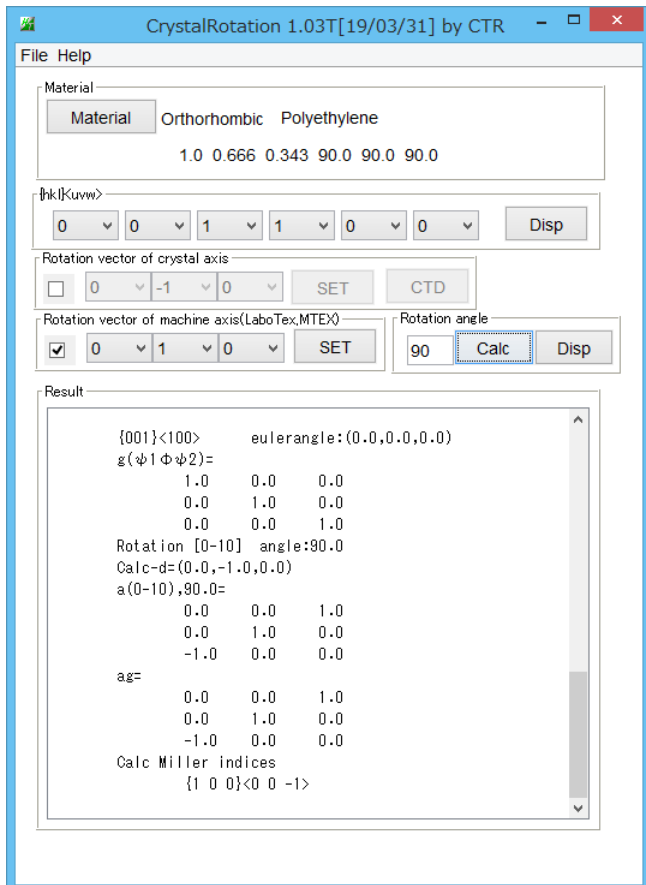


完全な Fiber が再現できていれば、直線的な方位になるが、反射+透過の測定が必要か

上記ODF図から再計算極点図



ND-MD変換が来ています。

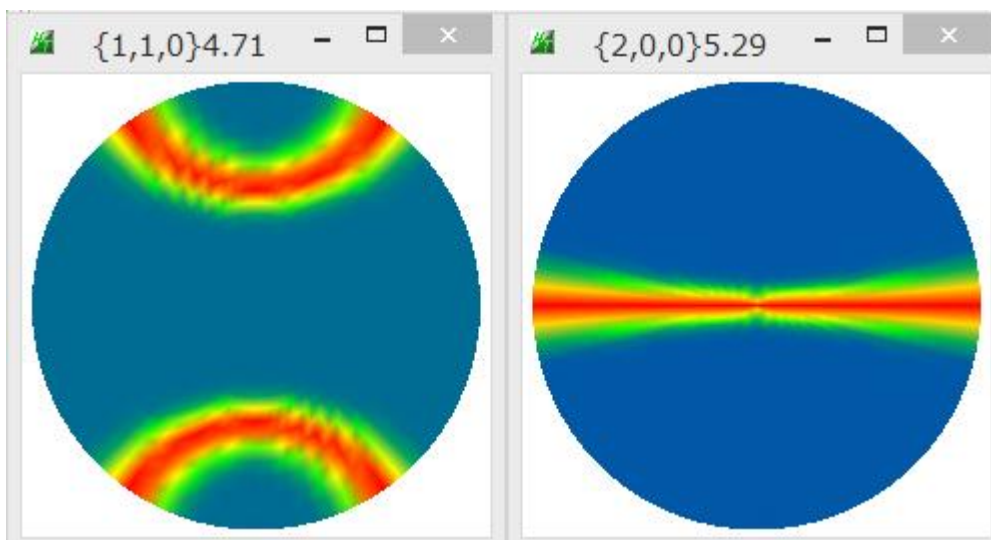


# 反射+透過データで解析

The screenshot displays the ODFPoleFigure 3.80SKT software interface. At the top, four circular pole figure plots are shown, each with a title:  $\{1,1,0\}4580.0$ ,  $\{1,1,0\}4580.0$ ,  $\{2,0,0\}5600.0$ , and  $\{2,0,0\}5600.0$ . The plots show intensity distributions in a circular domain, with the first two showing curved features and the last two showing horizontal features. Below the plots is a settings panel with the following sections:

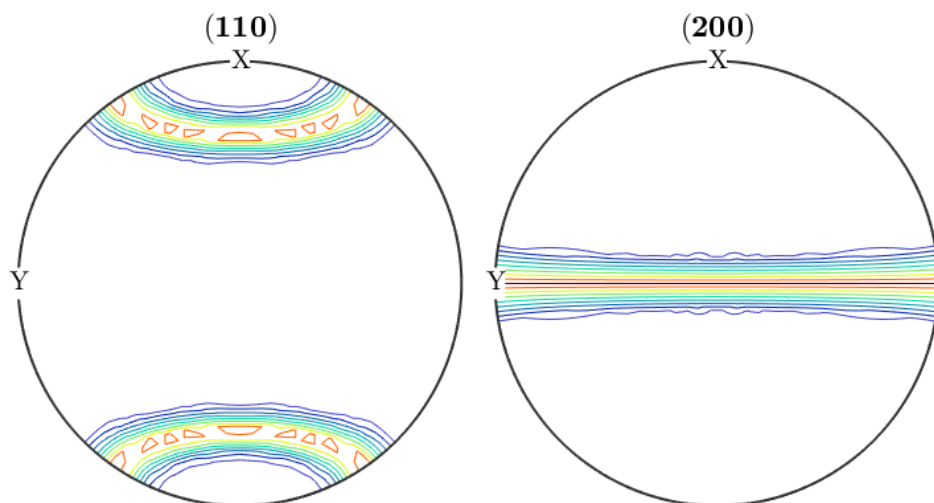
- Files select:** ASC(RINT-PC) and 110R\_2.ASC 110T.ASC 200R\_2.ASC 200T.ASC
- Calculation Condition:** U\*PEの解析#PE020-F-50%#tmp#a75#110R\_2.ASC
- Background delete mode:**  Nothing,  DoubleMode,  SingleMode,  LowMode,  HighMode. BG defocus: SmartLab-DSH2mm-Schulz. Minimum mo...:  Minimum mo...
- Smoothing:**  + $\alpha$ , 5, Savitzky-Golay mean, Disp.
- RD:**  0.0, Interpolation,  Full, Disp.
- Peak slit:** 7.0 mm, BG Slit: 7.0 mm,  PeakSlit / BGS..., BG Scope: 80.0 deg, 90.0 deg. Set, Disp,  $\alpha$ Inhibit.
- AbsCalc:**  Ref,  Trans, Schulz reflection method, Change, Absorption coefficient: 0.11 1/cm, Thickness: 1 cm, Set, 2Theta: 0.0 deg,  1/Kt, Profile.
- Defocus file Select Transmission defocus HKL+T:**  Defocus(1) functions file, U\*PEの解析#PE020-F-50%#random#defocus#DEFOCUS\_F.TXT, Make defocus function files by TXT2, Files,  Normalization, TextDisp.
- Defocus(3) function files folder(Calc unbackdefocus):** SmartLab-DSH2mm-Schulz, Limit Alfa Defocus value: Free(LimitValue=0.0)
- Defocus(2) function files folder(Calc backdefocus):** SmartLab-DSH2mm-Schulz,  Search minimum Equal Angle Rp(Cubic only),  1/Ra, Profile.
- Smoothing for ADC:**  Cycles: 3, Weight: 6, Disp.
- Normalization:**  CTR,  Connect,  Average,  Asc,  MTexAsc,  Ras,  TXT,  TXT2.
- OutFiles:**  Asc,  MTexAsc,  Ras,  TXT,  TXT2.
- Buttons: Cancel, Calc, Connect, Exit&ODF, ODF, ValueODFVF..., ValueODFVF-A.

バックグラウンド除去、吸収補正、defocus補正、データの接続を一括処理

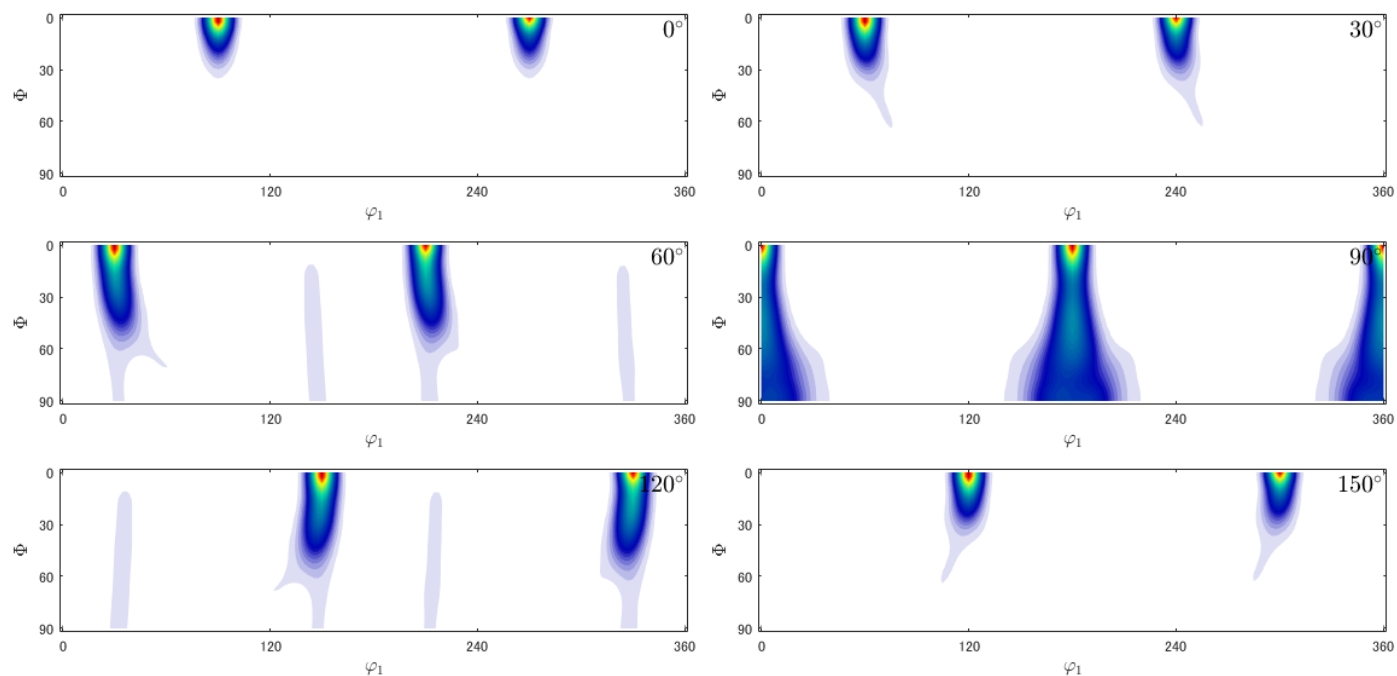


MTEXで解析

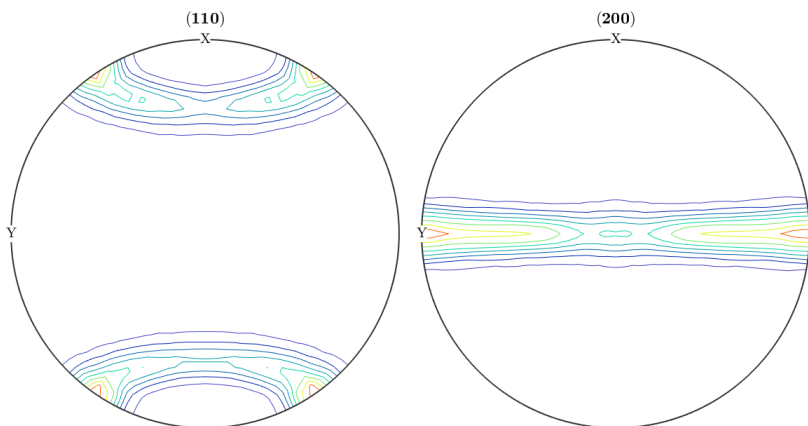
MTEXに読み込まれたデータ



ODF解析



再計算極点図

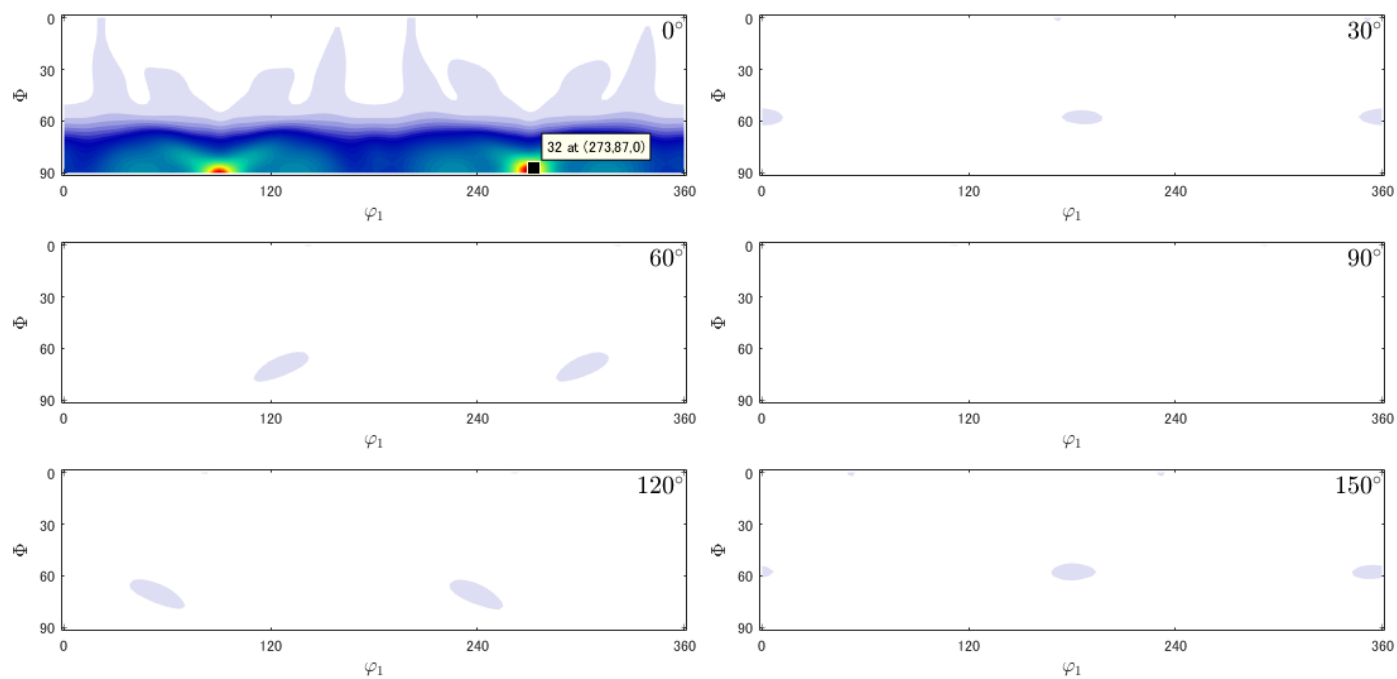


入力極点図と異なる。

空間群  $mmm$ ,  $mm2$ ,  $222$  でも同じ

軸回転

```
odfc=rotate(odf,rotation('axis',yvector,'angle',90*degree))
```



F i b e r にならない