

C u b i c の逆極点内側の結晶方位と逆極点図

非対称逆極点図を作成評価した結果、

[1 1 1] 方向対称操作で計算結果とずれない事が確認できました

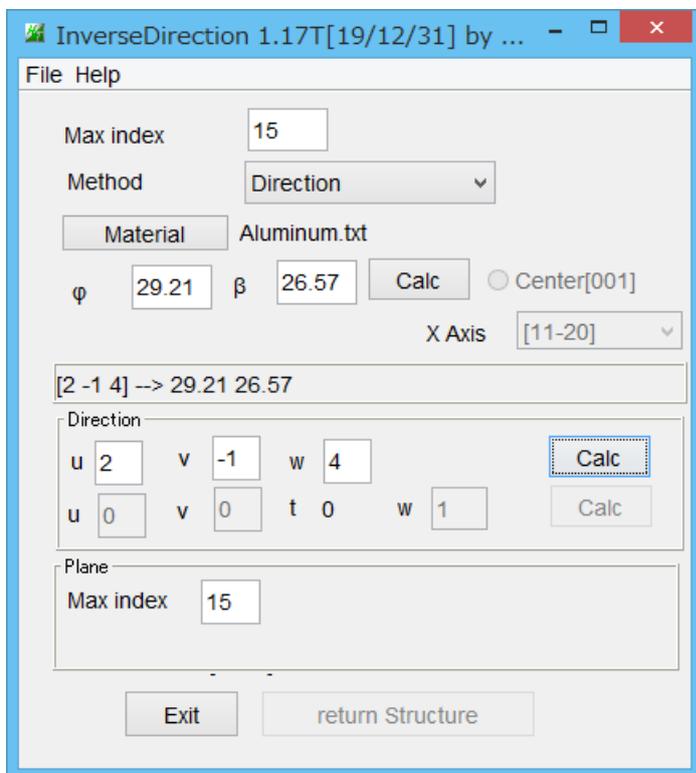
2019年10月23日

HelperTex Office

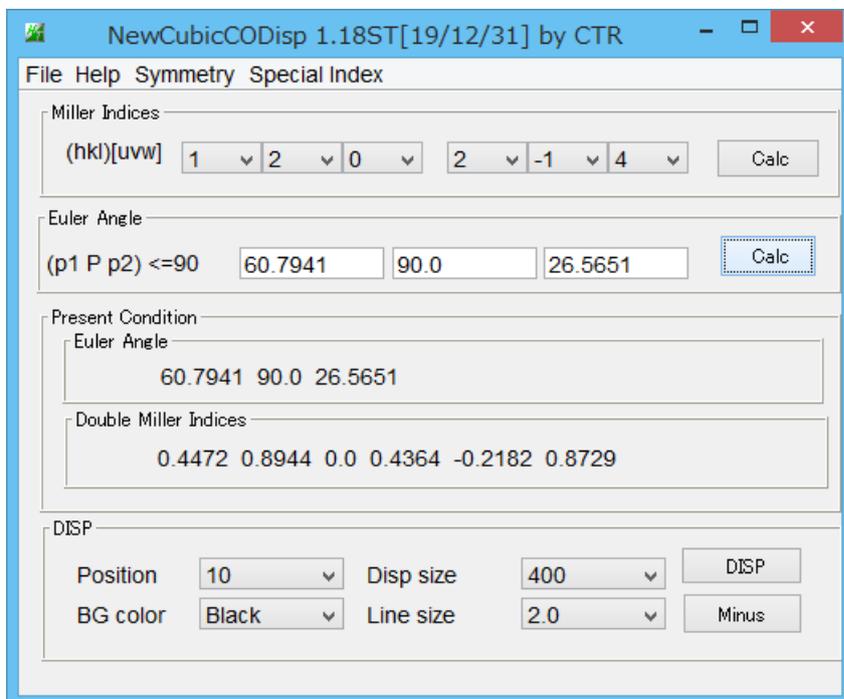
概要

Hexagonal 逆極点のRD方向に関し、非対称逆極点図の場合RD逆極点図と結晶方位の $\langle uvw \rangle$ が若干のずれが確認出来だが、Cubic についても確認してみます。

逆極点



対応する結晶方位



ODF図のCreate

Model ODF

Crystal Symmetry: **O** (Cubic) | Sample Symmetry: Orthorhombic | Grid Cells for Output ODF: 1.0*1.0 | Step: 0.50 | Diagram Range +/-: 45.0

Component No. 1: 100.0% | Component No. 1: 100.0% | Component No. 1: 100.0%

FWHM ϕ_1 = 10.0 | FWHM Φ = 10.0 | FWHM ϕ_2 = 10.0

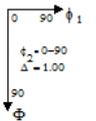
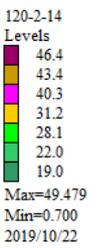
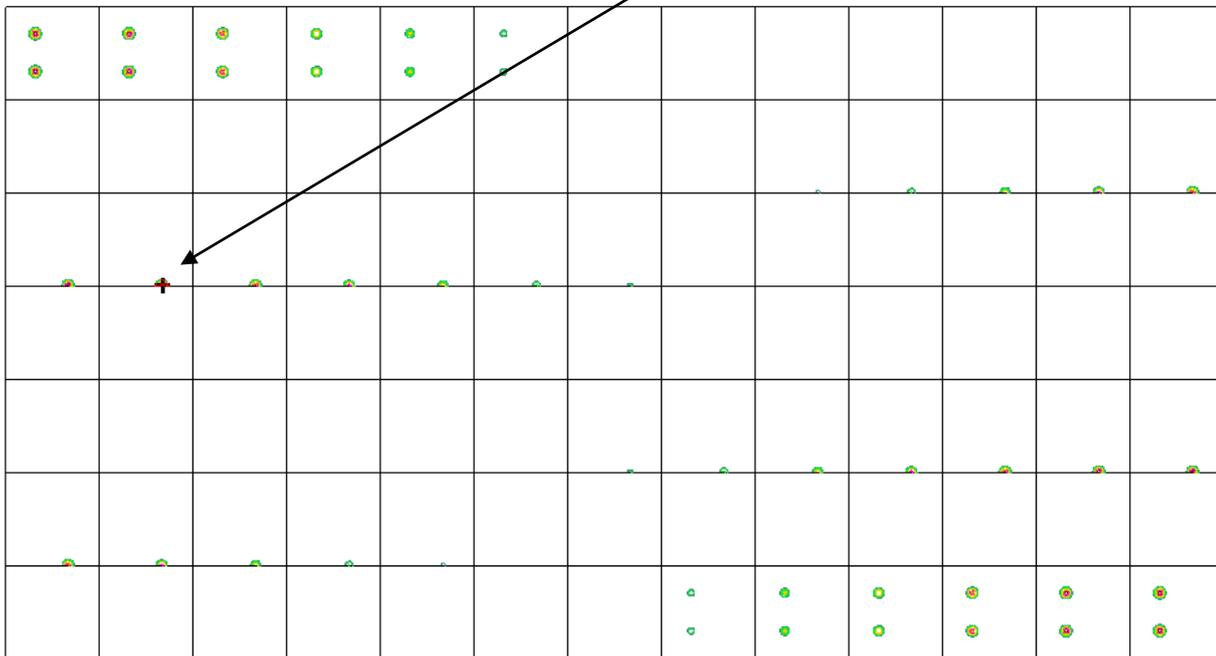
No	Texture Component	On	Distribution	FWHM ϕ_1	FWHM Φ	FWHM ϕ_2	Volume Fraction
1	{ 1 2 0 } < 2 -1 4 >	<input checked="" type="checkbox"/>	Gauss	10.0	10.0	10.0	30 %
2	{ 1 1 2 } < 1 1 -1 > copper	<input type="checkbox"/>	Gauss	10.0	10.0	10.0	10 %
3	{ 0 0 1 } < 1 0 0 > cube	<input type="checkbox"/>	Gauss	10.0	10.0	10.0	10 %
4	{ 1 1 0 } < 0 0 1 > goss	<input type="checkbox"/>	Gauss	10.0	10.0	10.0	10 %
5	{ 0 0 1 } < 1 1 0 >	<input type="checkbox"/>	Gauss	10.0	10.0	10.0	10 %
6	{ 1 1 0 } < 1 -1 1 >	<input type="checkbox"/>	Gauss	10.0	10.0	10.0	10 %
7	{ 1 1 1 } < -1 -1 2 >	<input type="checkbox"/>	Gauss	10.0	10.0	10.0	10 %
8	{ 1 0 1 } < 5 2 5 >	<input type="checkbox"/>	Gauss	10.0	10.0	10.0	10 %
9	{ 5 2 5 } < 1 -5 1 >	<input type="checkbox"/>	Gauss	10.0	10.0	10.0	10 %
10	{ 0 1 3 } < 1 0 0 >	<input type="checkbox"/>	Gauss	10.0	10.0	10.0	10 %

Max. Linearity | Background: 70 %

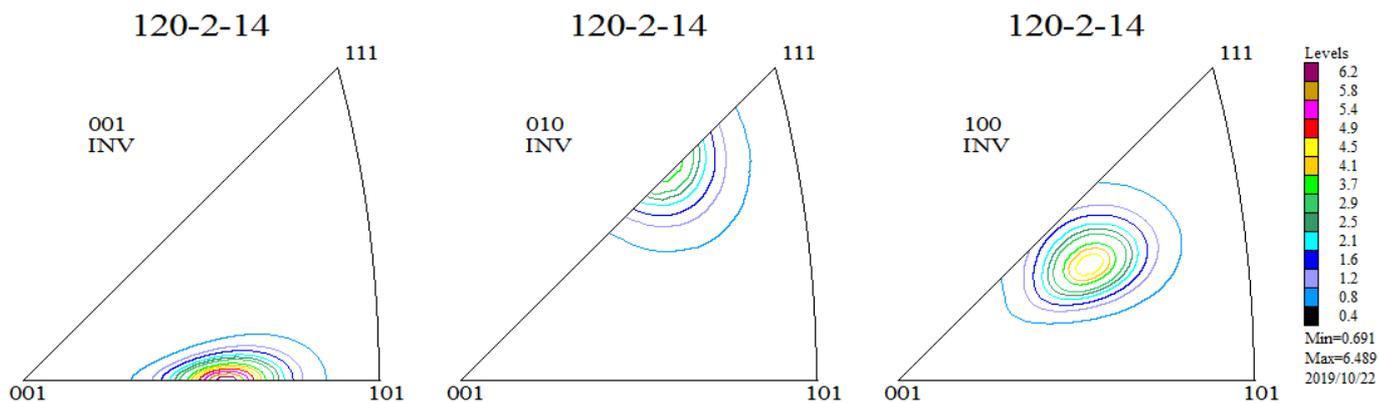
Sample Name: 120-2-14 | Project Name: Al | Cell Parameters (Relative): a: 1.0, b: 1.0, c: 1.0, α : 90.0, β : 90.0, γ : 90.0

Creation of Model ODF | Exit

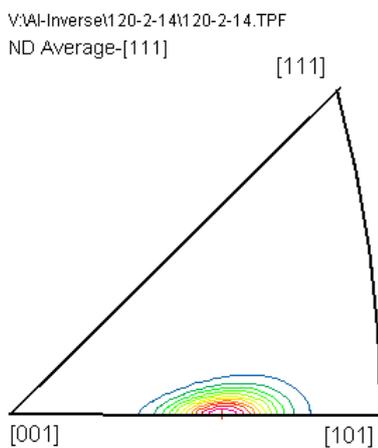
Step: 5.00 | ϕ_1 : 60.79 | Φ : 90.00 | ϕ_2 : 26.57 | HKL: (1 2 0) | Uvw: [2 -1 4]



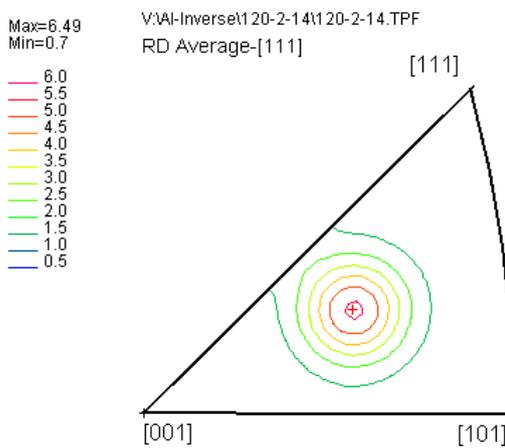
逆極点図



Exportして確認



($\phi=26.57$, $\beta=0.0$) $Z=6.49 \rightarrow [1,0,2]$



($\phi=0.0$, $\beta=0.0$) $Z=0.75 \rightarrow [2,-1,4]$

極点図の測定間隔を 1 deg とした場合の各 ODF ソフトウェアで出力されているデータ

LaboTex

91 x 361

90度の対称データで、45度では非対称

TexTools

91 x 361

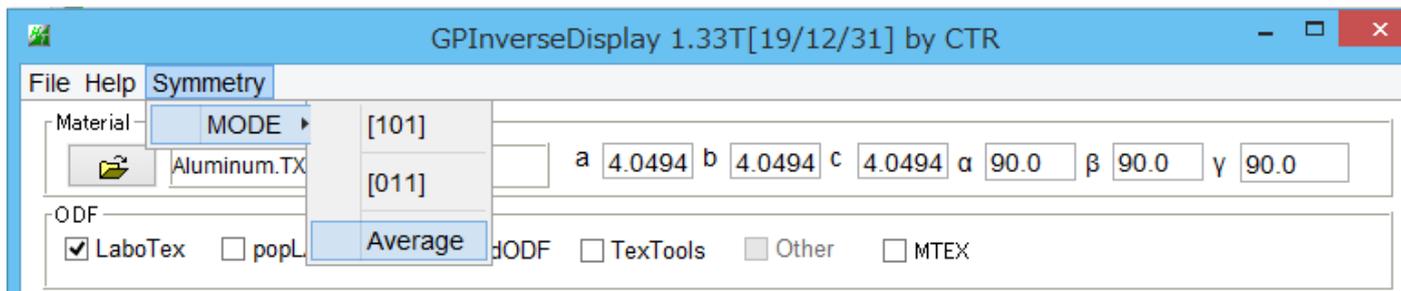
45度の対称データ

MTEX

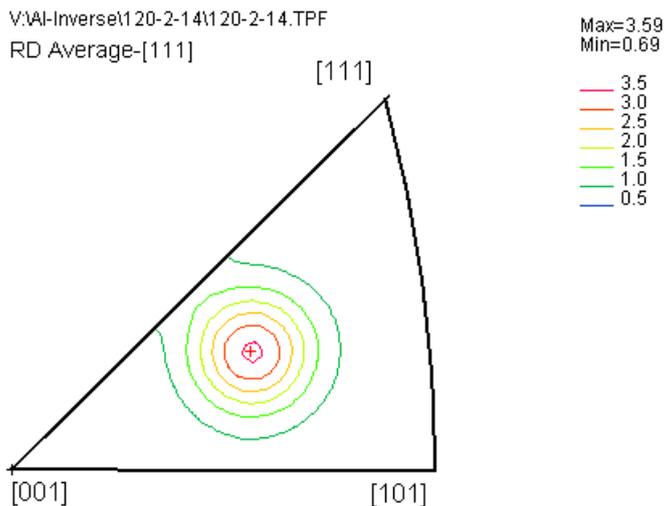
2530の羅列データ

(46 x 55) と考えられる

LaboTexによる0→45、45→90、平均データ {120} <2-14>のRD逆極点図

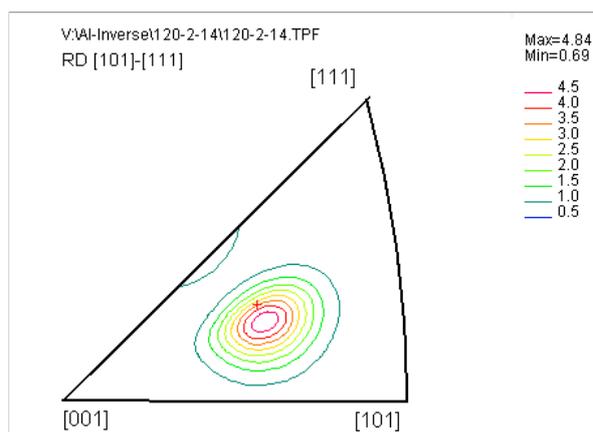


Average (デフォルト設定)



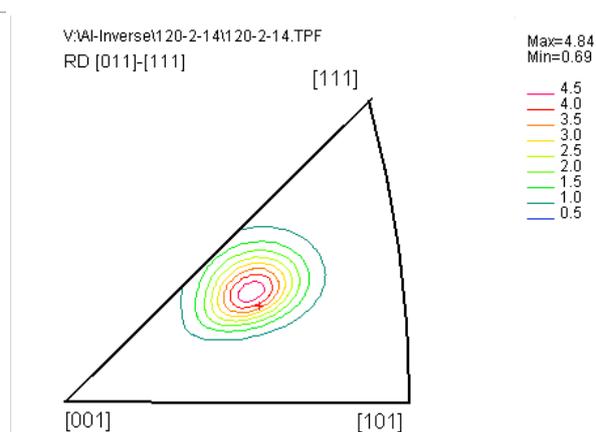
($\varphi=0.0$, $\beta=0.0$) Z=0.75 --> [2,-1,4]

[101]



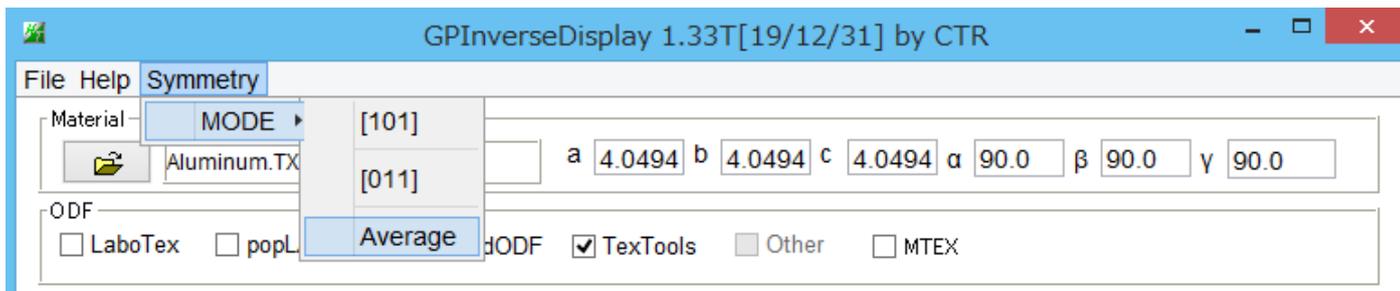
($\varphi=29.21$, $\beta=26.57$) Z=3.38 --> [2,-1,4]

[011]

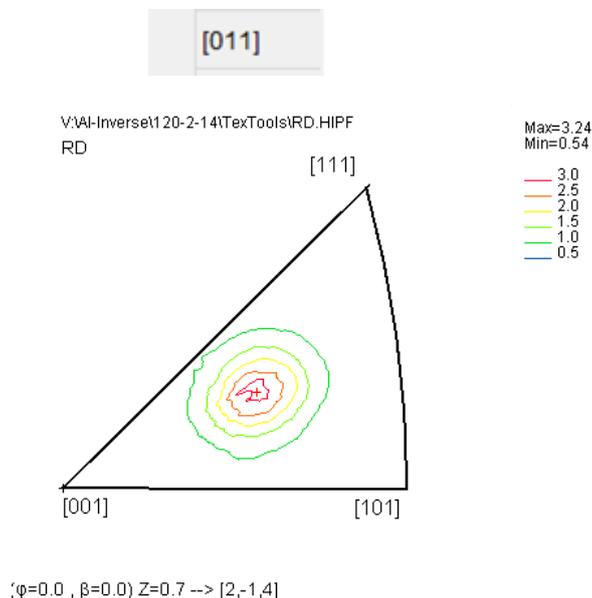
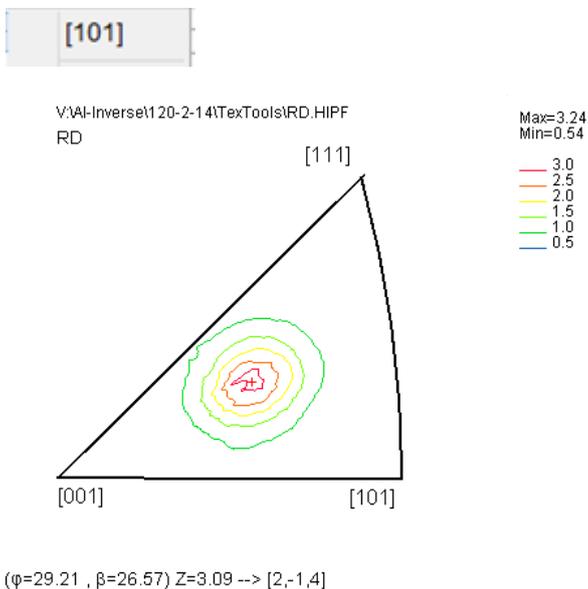
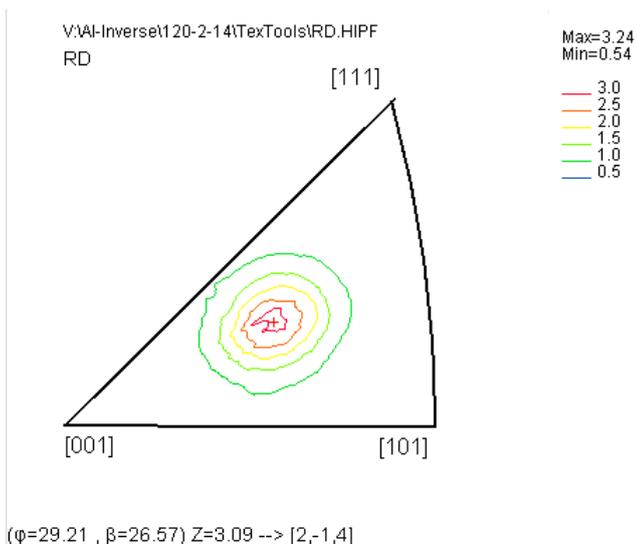


($\varphi=29.21$, $\beta=26.57$) Z=3.79 --> [2,-1,4]

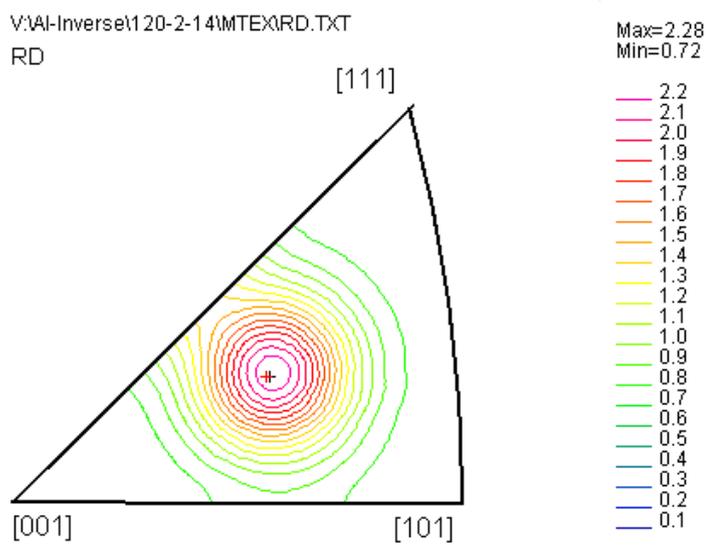
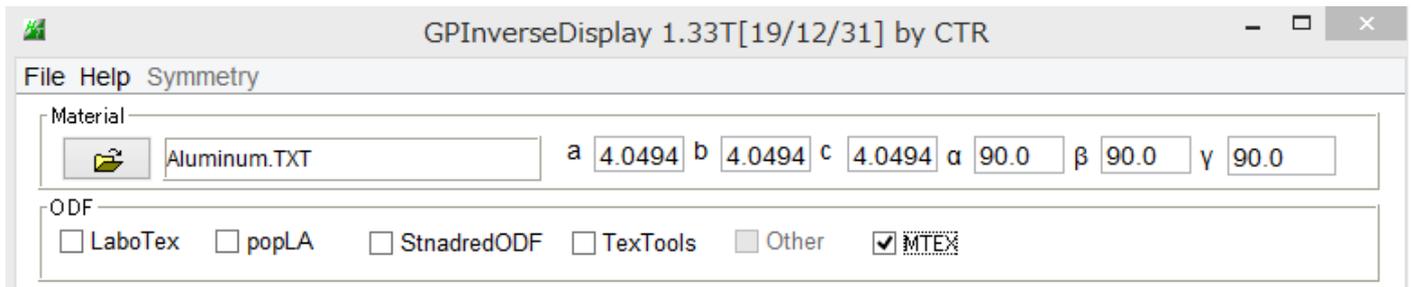
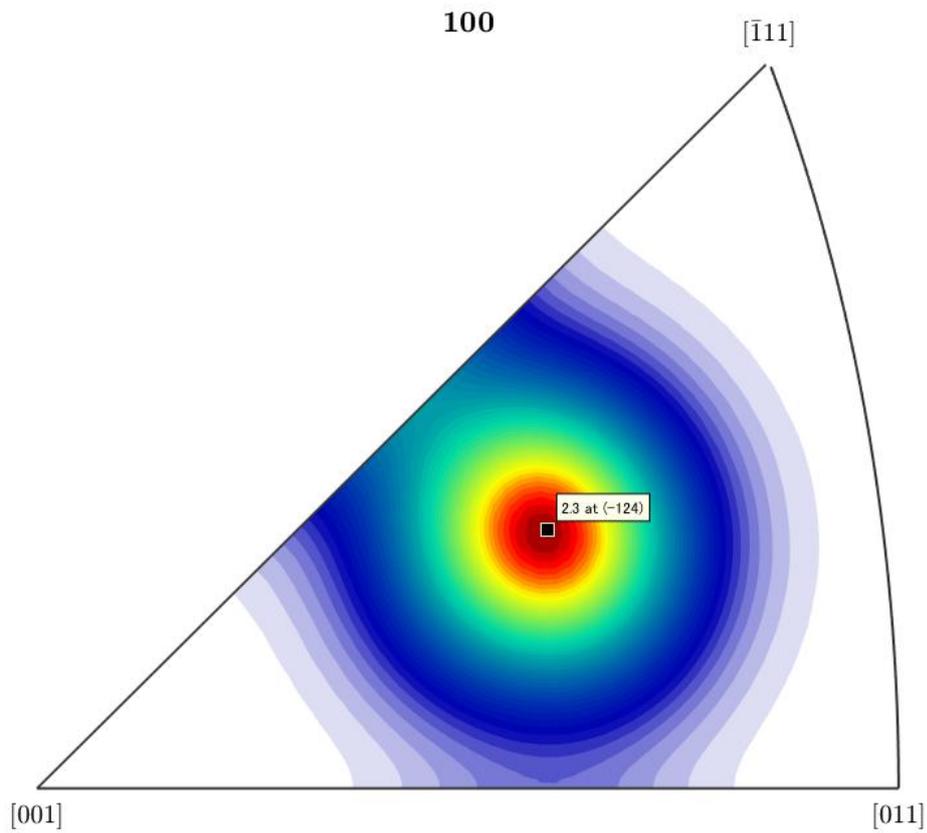
TexToolsによる0→45、45→90、平均データ {120} <2-14>のRD逆極点図



Average (デフォルト設定)



MTEXによる $\{120\} \langle 2-14 \rangle$ の平均RD逆極点図



($\varphi=29.6$, $\beta=26.4$) $Z=2.28 \rightarrow [2,1,4]$