ＭＴＥＸソフトウエアにおけるα範囲と結晶方位密度

２０１９年０２月０２日

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概要

同一データでもＯＤＦ解析方法により計算される結晶方位密度は異なる。

資料 http://helpertex.sakura.ne.jp/Soft/DOC3-MTEX/LaboTex-TexTools-MTEX-compare.pdf

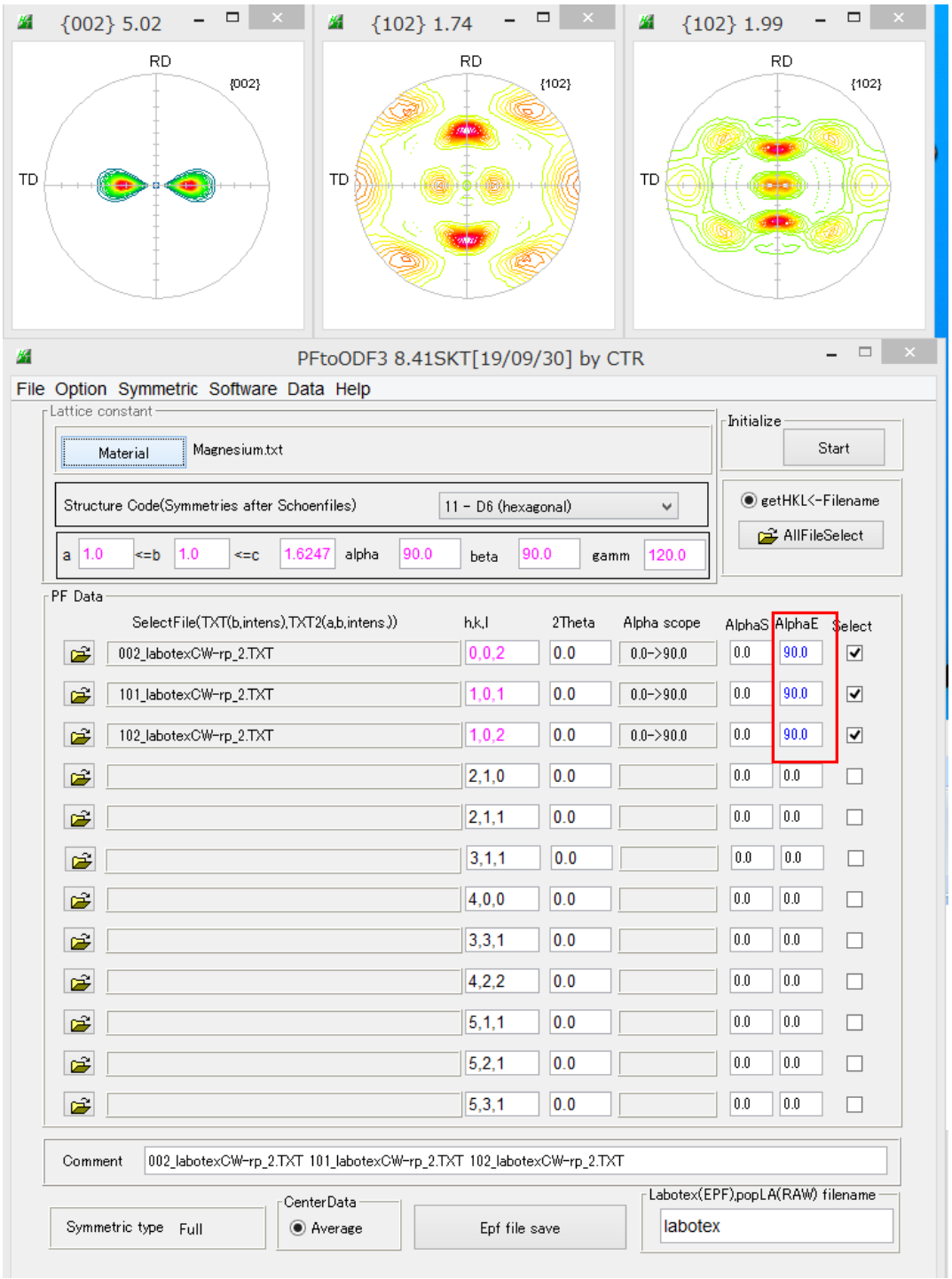
により、MTEX は Hermonic の可能性が高い。もし Hermonic の場合、StandardODF と同様に

資料 http://helpertex.sakura.ne.jp/Soft/DOC/StandardODF/StandardODF-PoleErea.pdf の傾向の可能性があるため調査する。

データは、比較的解析し易い半価幅の広く、VF%の低いデータを用い直接法 LaboTex と比較する。

入力データ　半価幅 20deg、VF10%の極点図を LaboTex で作成し PFtoODF3 を介して入力する。

調査結果は、方位密度が低い場合、Hermonic のような減衰は認められない。

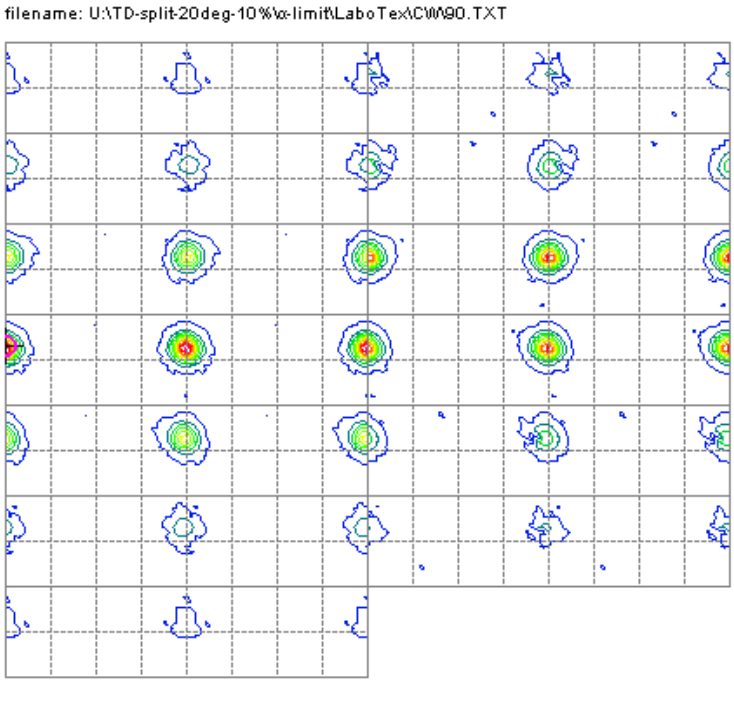


α範囲を６０－＞９０とする。

各データを ODF で解析、データ Export、GPODFDisplay の hkluvwlist で計算する。

α 範囲が 0->90 の場合

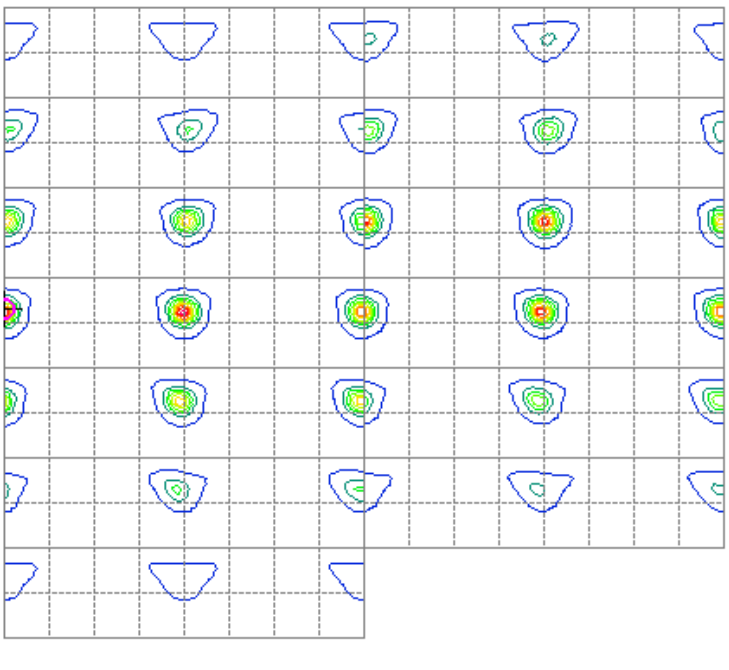
LaboTex



{hkl}<uvtw>,labo90
{0001}<10-10>,0.84
{0001}<2-1-10>,0.88
{-12-10}<10-10>,0.89
{01-10}<2-1-10>,0.9
{-12-10}<0001>,0.87
{01-10}<0001>,0.91
{-12-15}<10-10>,1.93
{01-13}<2-1-10>,10.8
{-12-14}<10-10>,1.7
{02-25}<2-1-10>,10.4
{-12-18}<4-843>,0.86
{01-14}<0-221>,0.95
{-12-16}<1-211>,0.76
{01-13}<0-332>,0.96

(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=10.85

MTEX

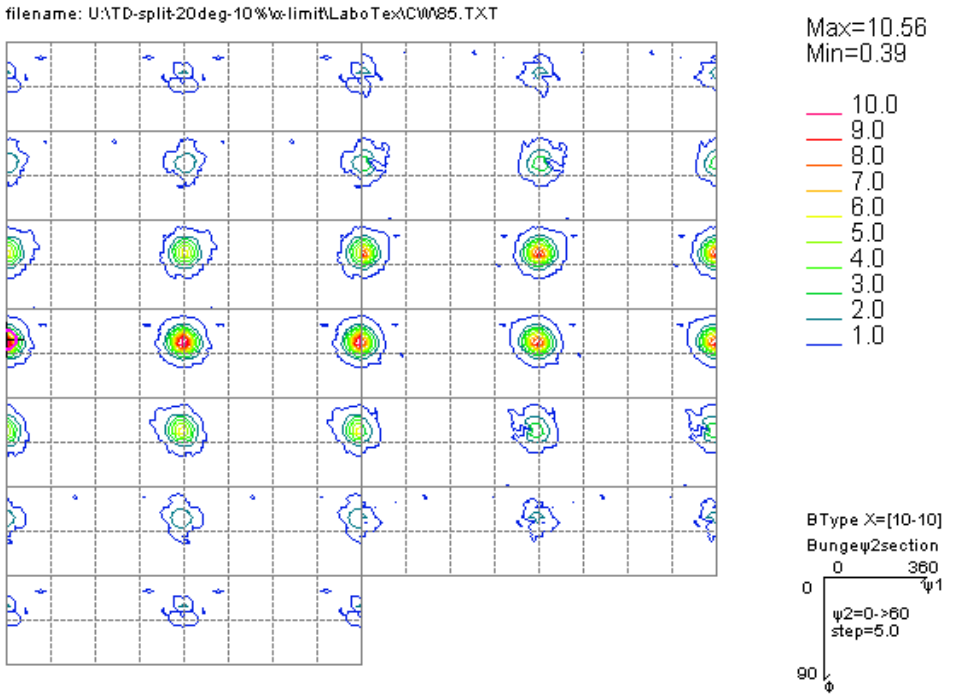


{hkl}<uvtw>,mtex90
{0001}<10-10>,0.82
{0001}<2-1-10>,0.82
{-12-10}<10-10>,0.84
{01-10}<2-1-10>,0.92
{-12-10}<0001>,0.84
{01-10}<0001>,0.92
{-12-15}<10-10>,1.82
{01-13}<2-1-10>,8.74
{-12-14}<10-10>,1.59
{02-25}<2-1-10>,9.32
{-12-18}<4-843>,1.26
{01-14}<0-221>,0.89
{-12-16}<1-211>,0.89
{01-13}<0-332>,0.9

(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=8.74

α 範囲が 0->85 の場合

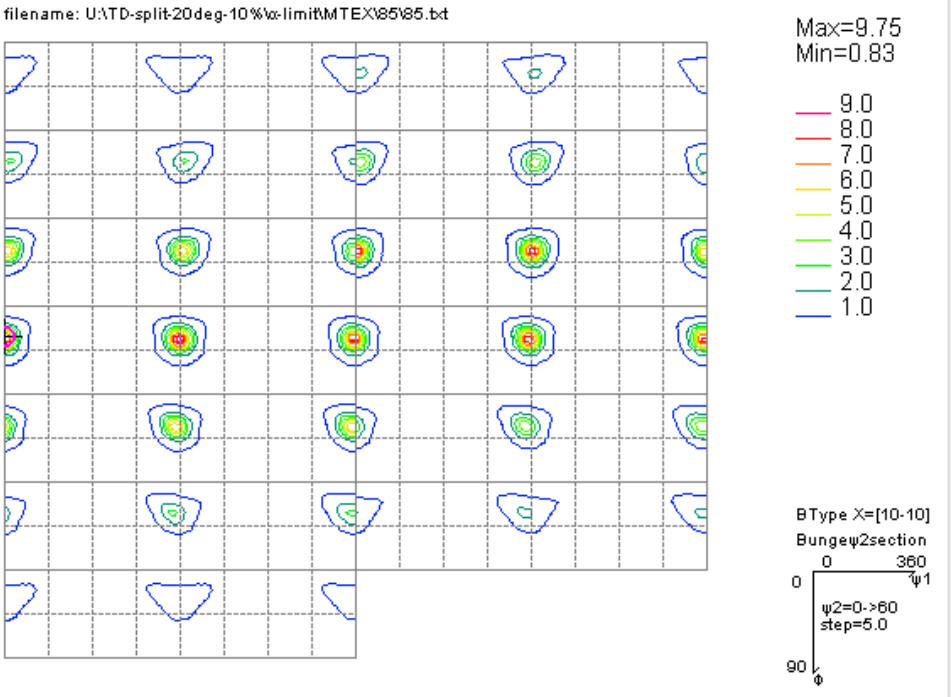
LaboTex



{hkl}<uvtw>,labo85
{0001}<10-10>,0.84
{0001}<2-1-10>,0.87
{-12-10}<10-10>,0.83
{01-10}<2-1-10>,0.71
{-12-10}<0001>,0.68
{01-10}<0001>,0.78
{-12-15}<10-10>,0.93
{01-13}<2-1-10>,10.56
{-12-14}<10-10>,0.95
{02-25}<2-1-10>,10.51
{-12-18}<4-843>,0.83
{01-14}<0-221>,0.85
{-12-16}<1-211>,0.84
{01-13}<0-332>,0.91

(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=10.56

MTEX

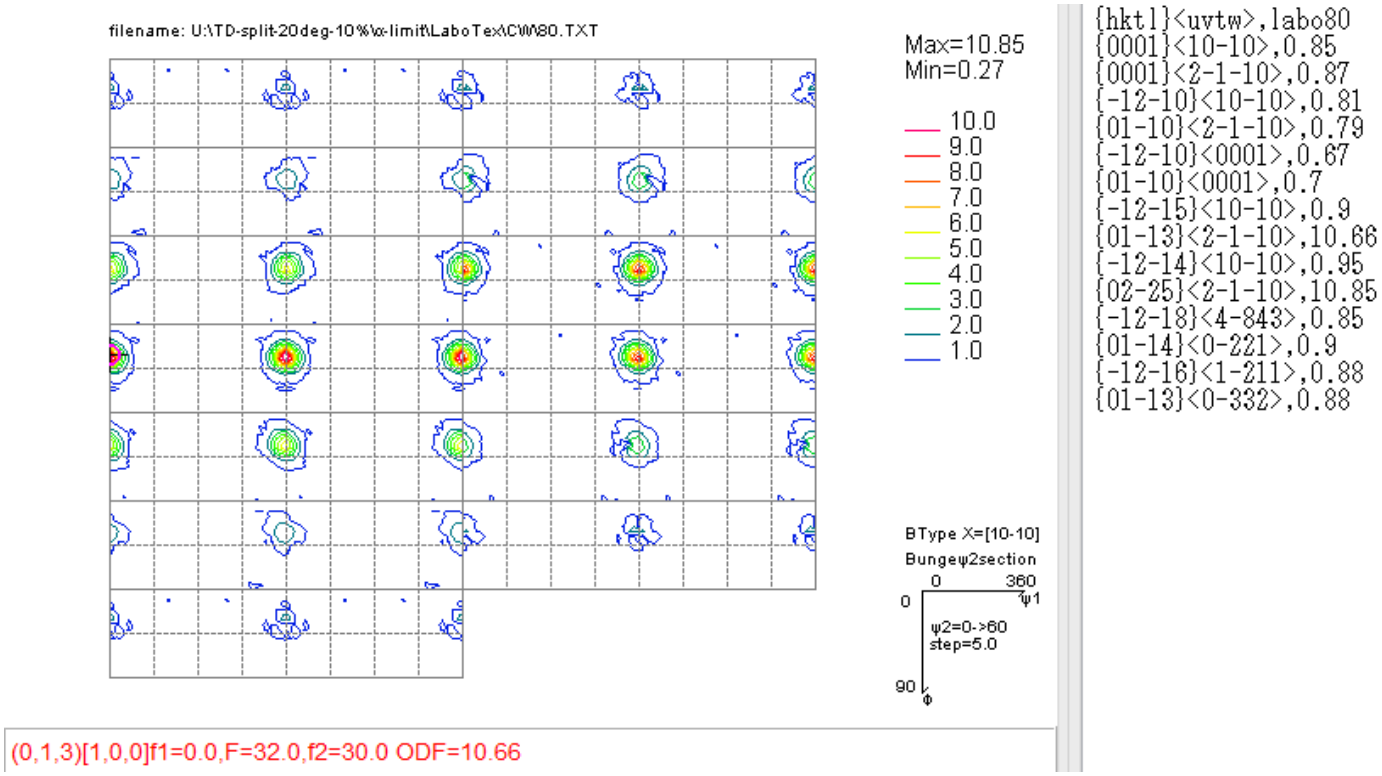


{hkl}<uvtw>,mtex85
{0001}<10-10>,0.83
{0001}<2-1-10>,0.83
{-12-10}<10-10>,0.85
{01-10}<2-1-10>,0.94
{-12-10}<0001>,0.84
{01-10}<0001>,0.9
{-12-15}<10-10>,1.87
{01-13}<2-1-10>,9.2
{-12-14}<10-10>,1.56
{02-25}<2-1-10>,9.75
{-12-18}<4-843>,1.24
{01-14}<0-221>,0.89
{-12-16}<1-211>,0.88
{01-13}<0-332>,0.91

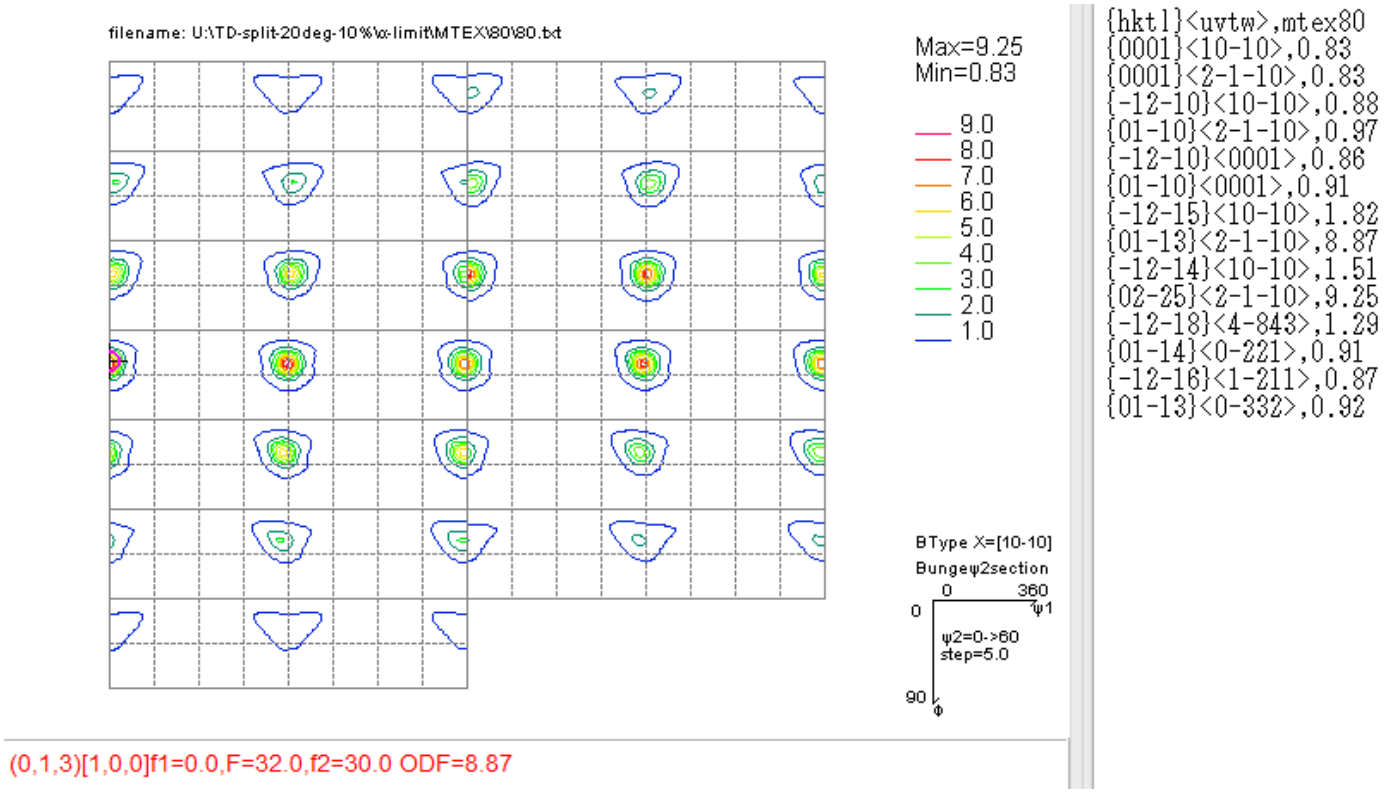
(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=9.2

α 範囲が 0->80 の場合

LaboTex

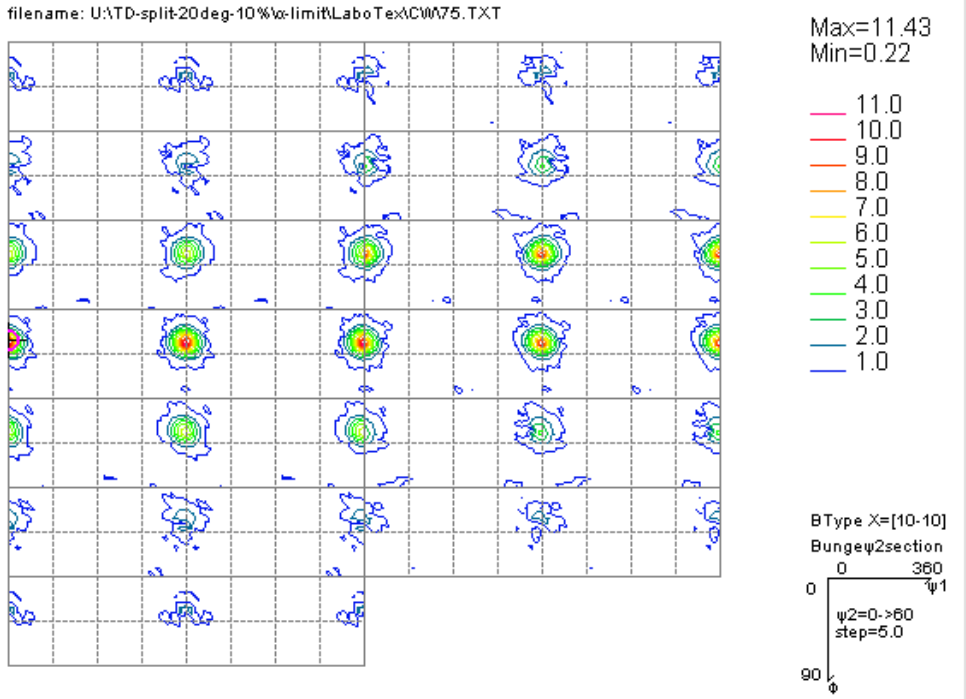


MTEX



α 範囲が 0->75 の場合

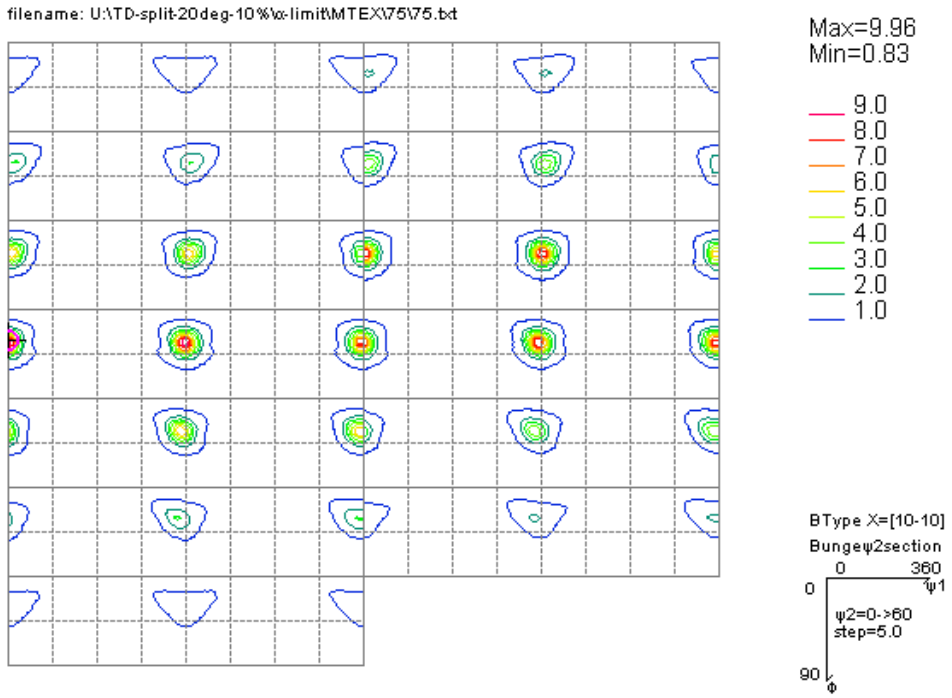
LaboTex



{hkl}<uvtw>,labo75
{0001}<10-10>,0.85
{0001}<2-1-10>,0.87
{-12-10}<10-10>,0.81
{01-10}<2-1-10>,0.6
{-12-10}<0001>,0.65
{01-10}<0001>,0.68
{-12-15}<10-10>,0.93
{01-13}<2-1-10>,10.13
{-12-14}<10-10>,0.78
{02-25}<2-1-10>,11.43
{-12-18}<4-843>,0.93
{01-14}<0-221>,0.9
{-12-16}<1-211>,0.9
{01-13}<0-332>,0.9

(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=10.13

MTEX

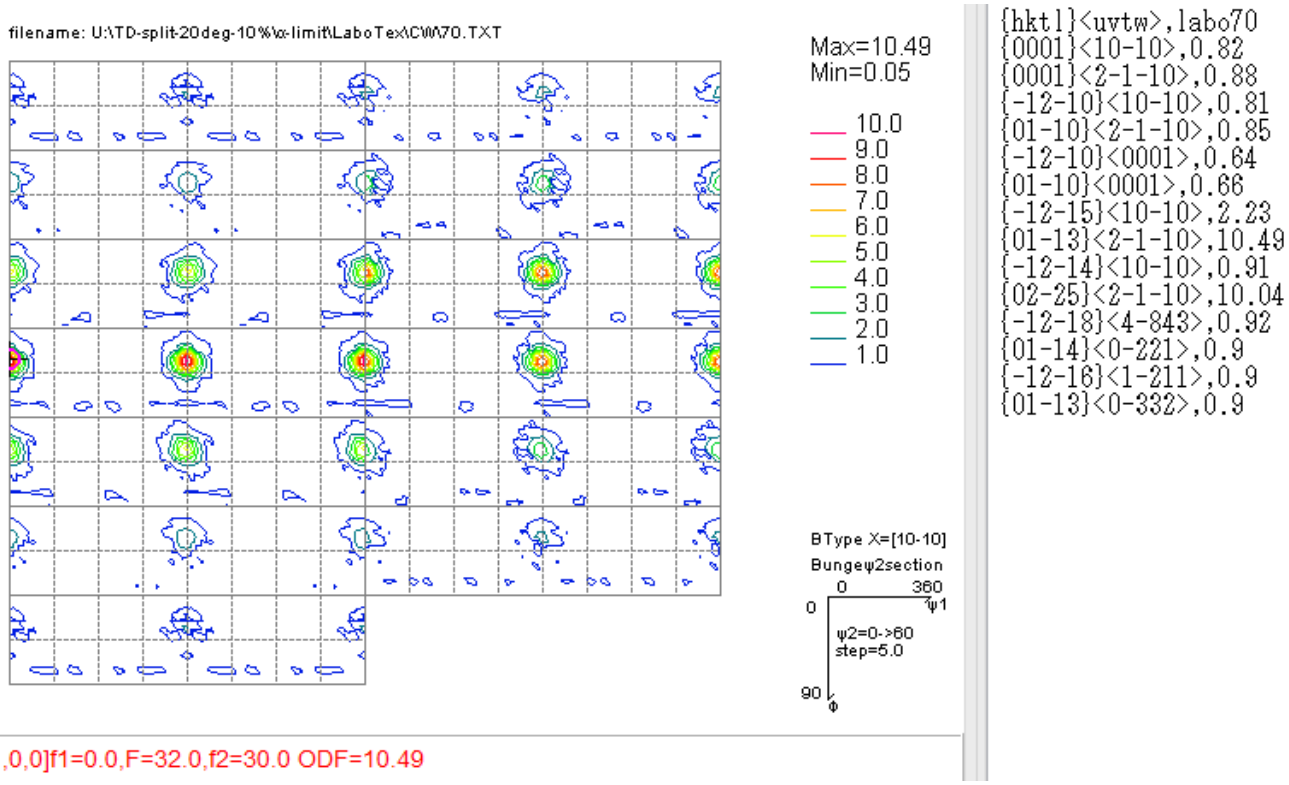


{hkl}<uvtw>,mtex75
{0001}<10-10>,0.83
{0001}<2-1-10>,0.83
{-12-10}<10-10>,0.87
{01-10}<2-1-10>,0.97
{-12-10}<0001>,0.86
{01-10}<0001>,0.92
{-12-15}<10-10>,1.75
{01-13}<2-1-10>,9.52
{-12-14}<10-10>,1.46
{02-25}<2-1-10>,9.96
{-12-18}<4-843>,1.25
{01-14}<0-221>,0.89
{-12-16}<1-211>,0.86
{01-13}<0-332>,0.91

(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=9.52

α 範囲が 0->70 の場合

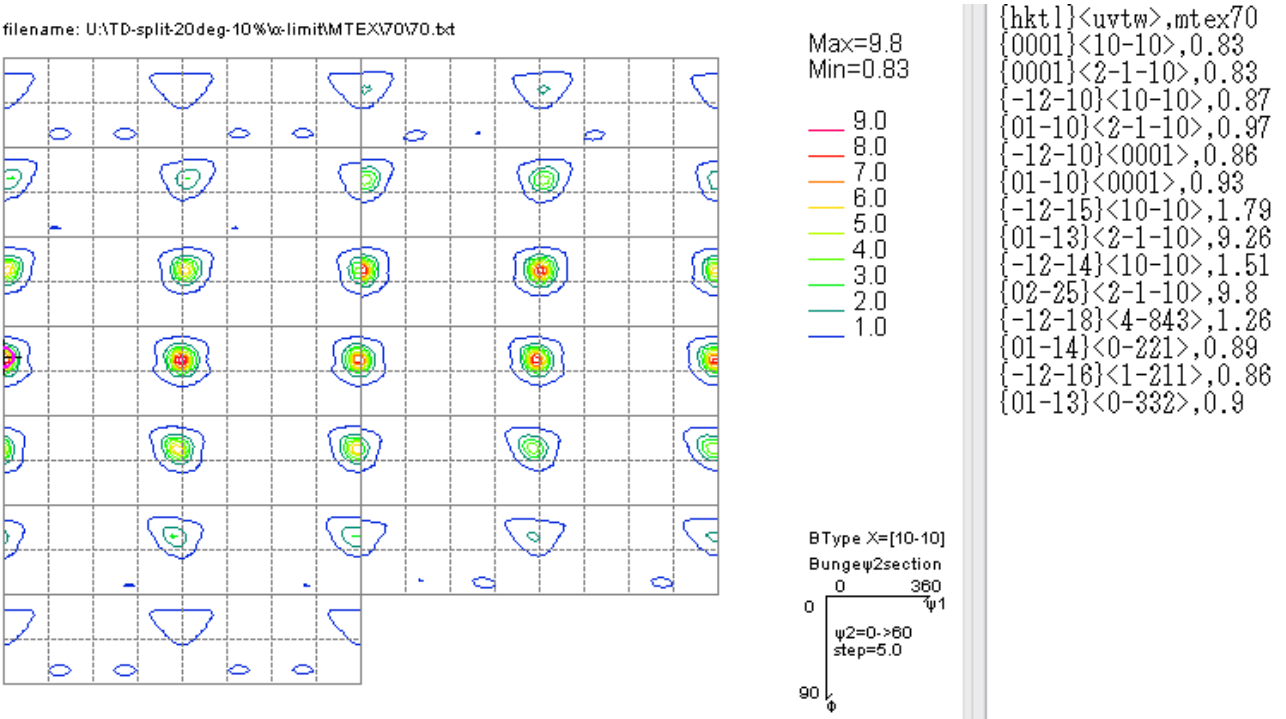
LaboTex



{hkl}<uvtw>,labo70
{0001}<10-10>,0.82
{0001}<2-1-10>,0.88
{-12-10}<10-10>,0.81
{01-10}<2-1-10>,0.85
{-12-10}<0001>,0.64
{01-10}<0001>,0.66
{-12-15}<10-10>,2.23
{01-13}<2-1-10>,10.49
{-12-14}<10-10>,0.91
{02-25}<2-1-10>,10.04
{-12-18}<4-843>,0.92
{01-14}<0-221>,0.9
{-12-16}<1-211>,0.9
{01-13}<0-332>,0.9

(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=10.49

MTEX

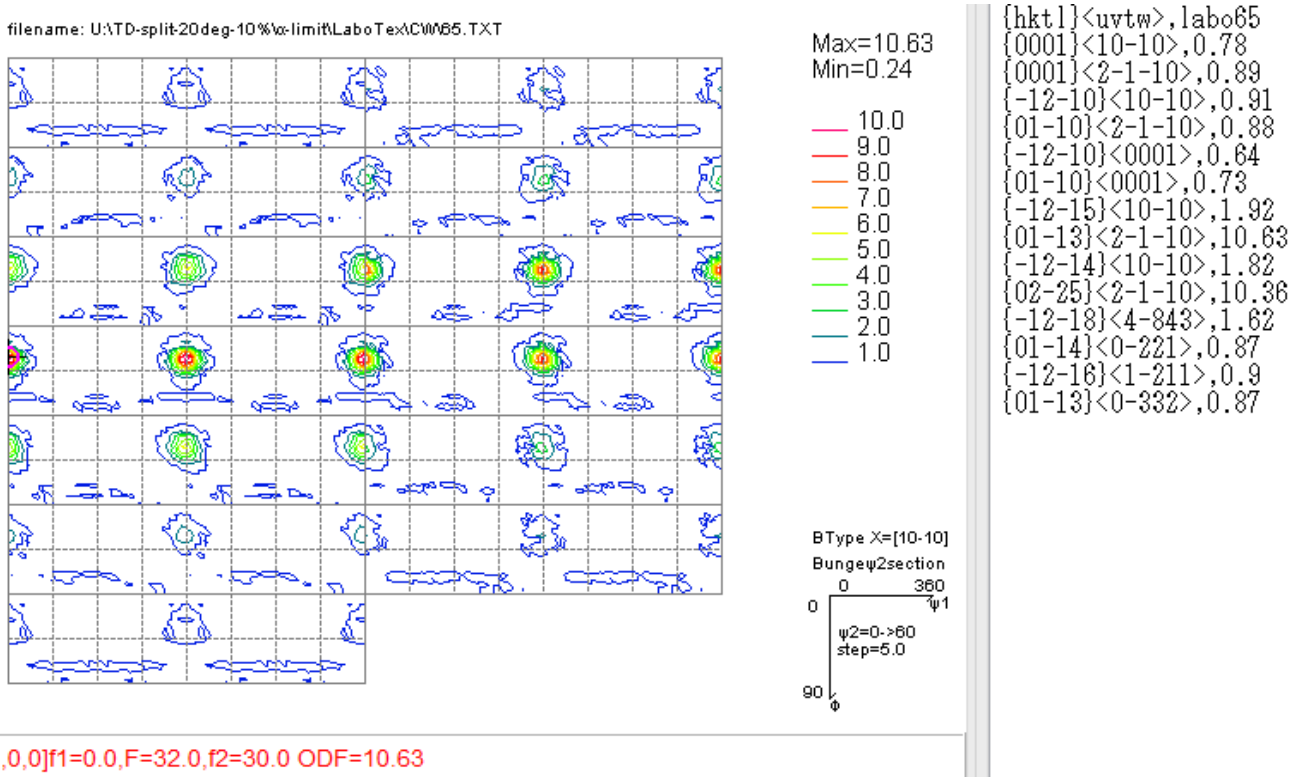


{hkl}<uvtw>,mtex70
{0001}<10-10>,0.83
{0001}<2-1-10>,0.83
{-12-10}<10-10>,0.87
{01-10}<2-1-10>,0.97
{-12-10}<0001>,0.86
{01-10}<0001>,0.93
{-12-15}<10-10>,1.79
{01-13}<2-1-10>,9.26
{-12-14}<10-10>,1.51
{02-25}<2-1-10>,9.8
{-12-18}<4-843>,1.26
{01-14}<0-221>,0.89
{-12-16}<1-211>,0.86
{01-13}<0-332>,0.9

(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=9.26

α範囲が 0->65 の場合

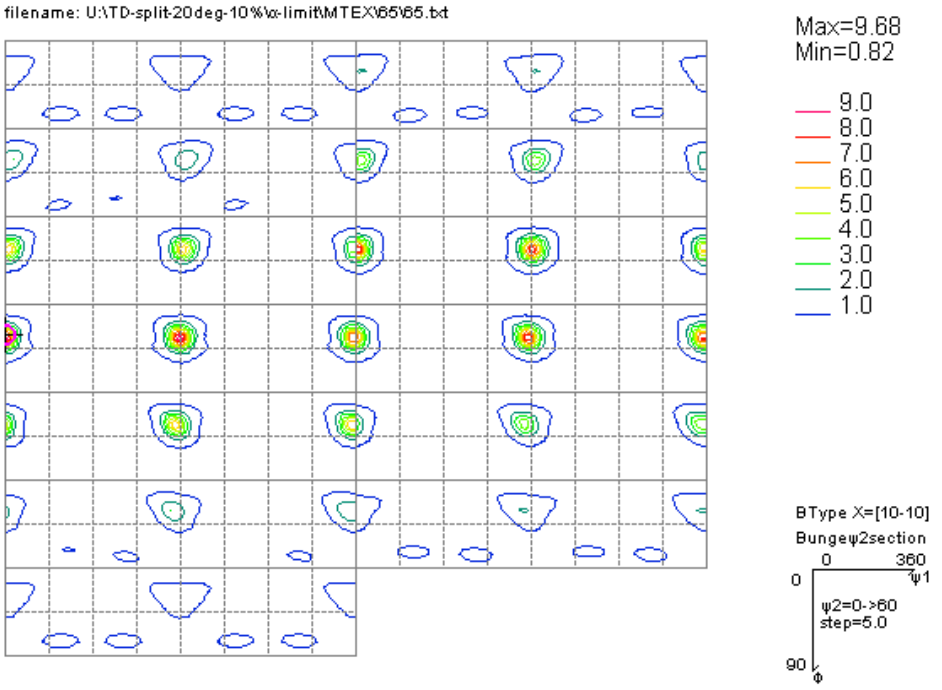
LaboTex



{hkl}<uvtw>,labo65
{0001}<10-10>,0.78
{0001}<2-1-10>,0.89
{-12-10}<10-10>,0.91
{01-10}<2-1-10>,0.88
{-12-10}<0001>,0.64
{01-10}<0001>,0.73
{-12-15}<10-10>,1.92
{01-13}<2-1-10>,10.63
{-12-14}<10-10>,1.82
{02-25}<2-1-10>,10.36
{-12-18}<4-843>,1.62
{01-14}<0-221>,0.87
{-12-16}<1-211>,0.9
{01-13}<0-332>,0.87

(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=10.63

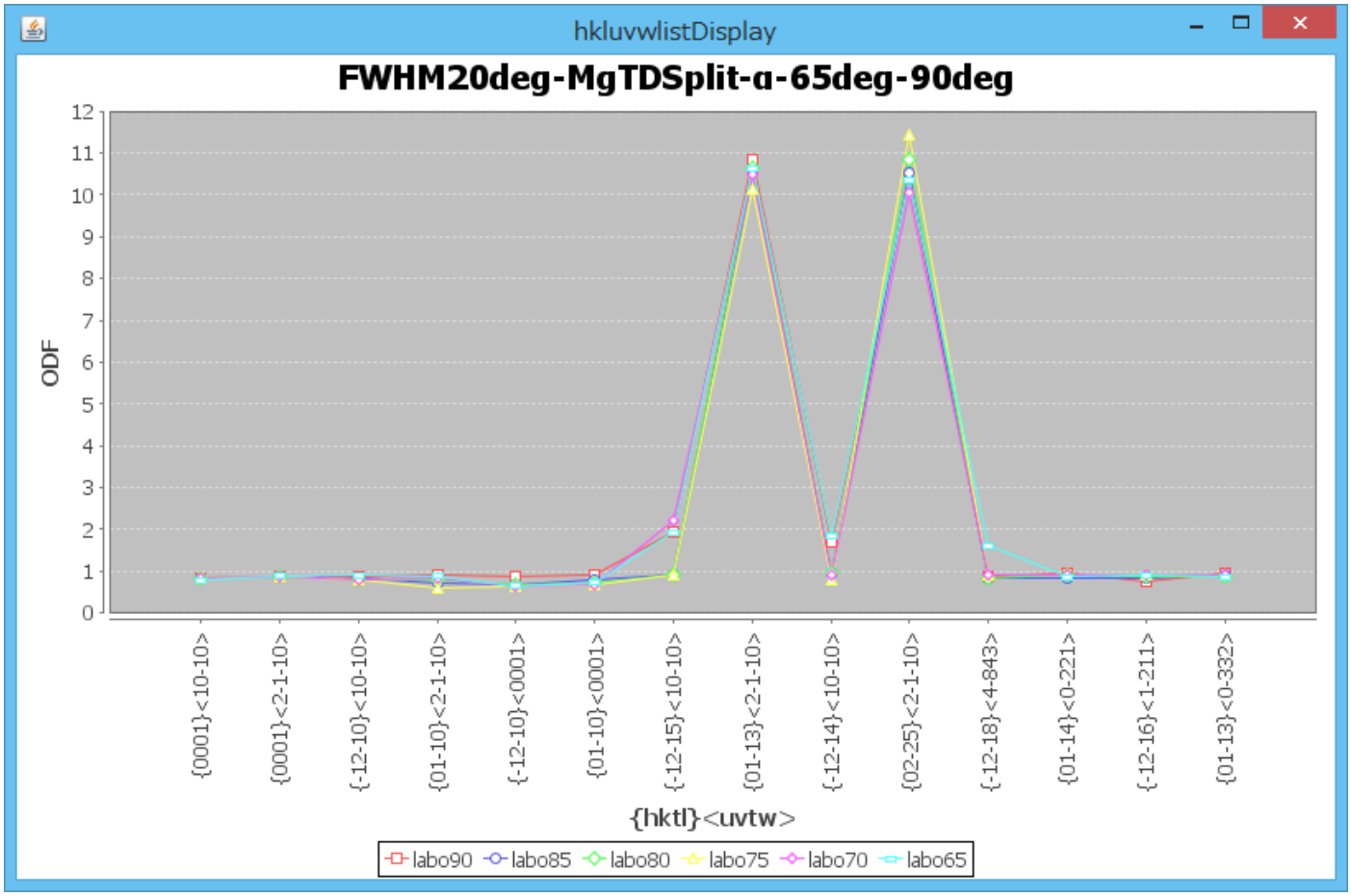
MTEX



{hkl}<uvtw>,mtex65
{0001}<10-10>,0.83
{0001}<2-1-10>,0.82
{-12-10}<10-10>,0.86
{01-10}<2-1-10>,0.96
{-12-10}<0001>,0.86
{01-10}<0001>,0.93
{-12-15}<10-10>,1.72
{01-13}<2-1-10>,9.17
{-12-14}<10-10>,1.51
{02-25}<2-1-10>,9.68
{-12-18}<4-843>,1.26
{01-14}<0-221>,0.88
{-12-16}<1-211>,0.86
{01-13}<0-332>,0.89

(0,1,3)[1,0,0]f1=0.0,F=32.0,f2=30.0 ODF=9.17

LaboTex



MTEX