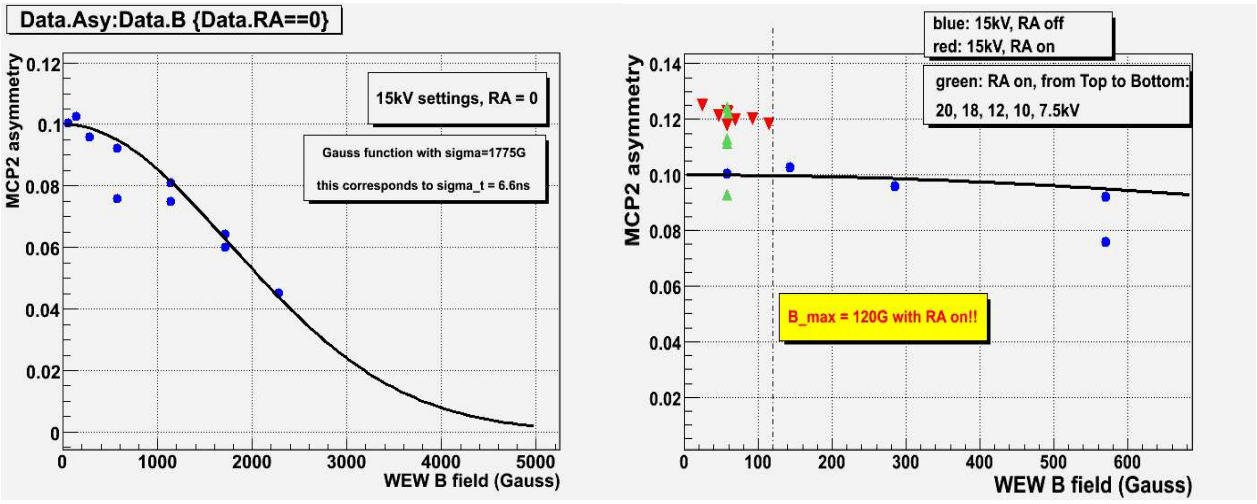
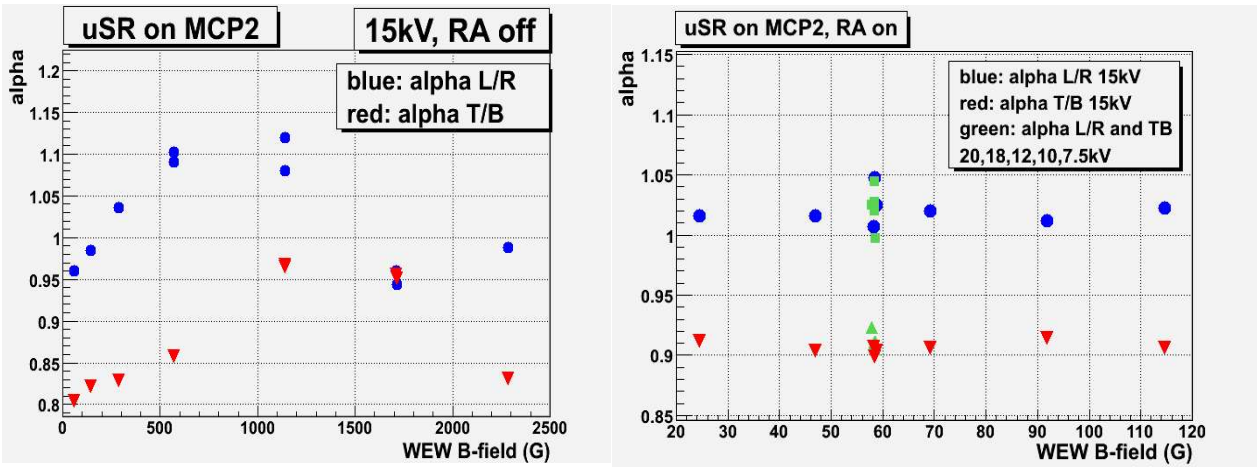
Data from file mcp2.data (page 4): WKM fit of one exponentially relaxing signal to forward/backward asymmetries of L/R, T/B; total event statistics in table on page 5. Fits to L/R and T/B asymmetries separately are on pages 5 and 6.

**Muon decay asymmetries as functions of B-field and transport settings:**




Time resolution estimated to $\sigma_t$ = 6.6 ns for 15kV/RA=0 settings. At 3000G (40.6MHz) about 24% of Zero-Field asymmetry is estimated. This decreases to 7.8% at 4000G (54.2 MHz).

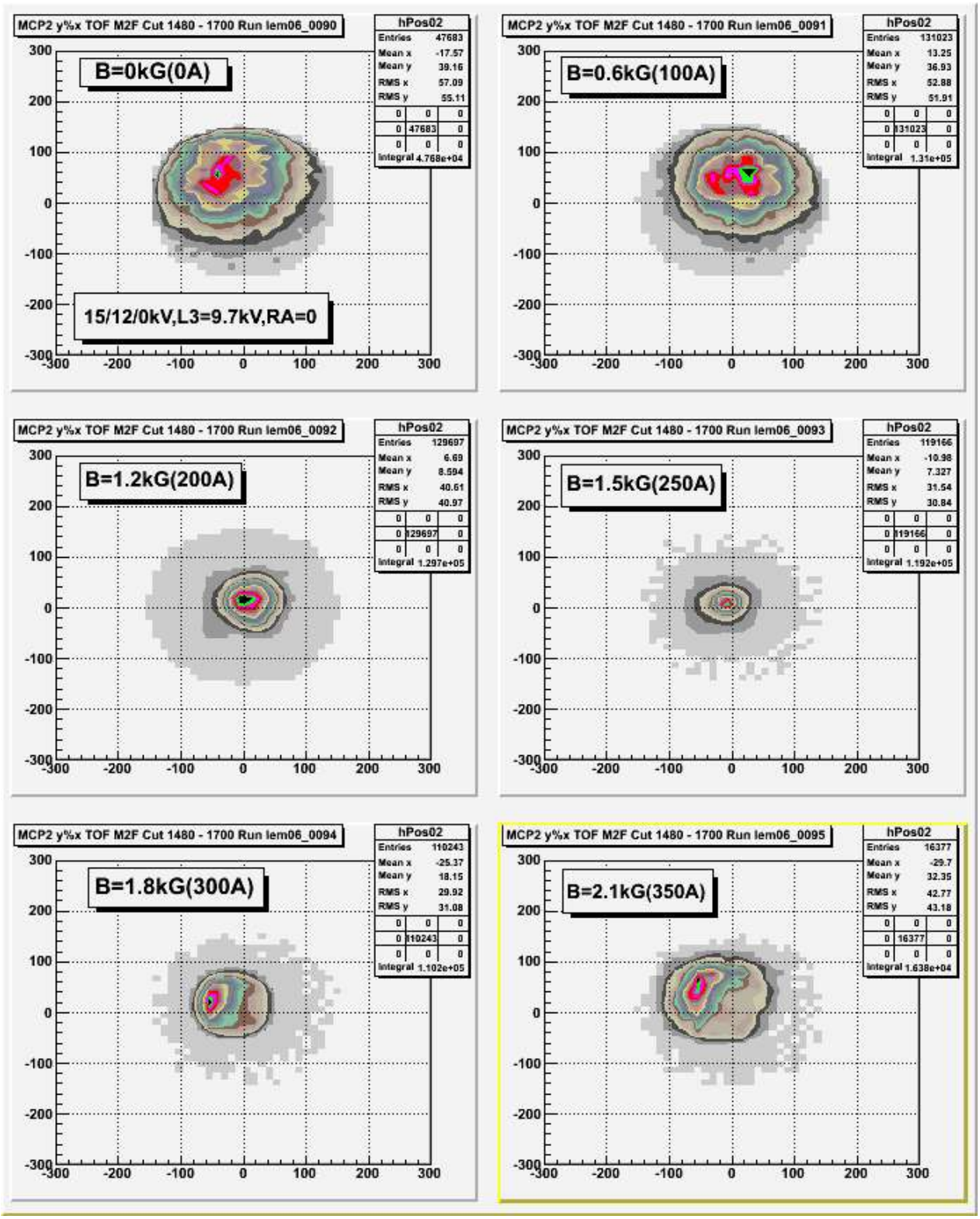
**Alpha parameter as a function of B-field and transport settings:**



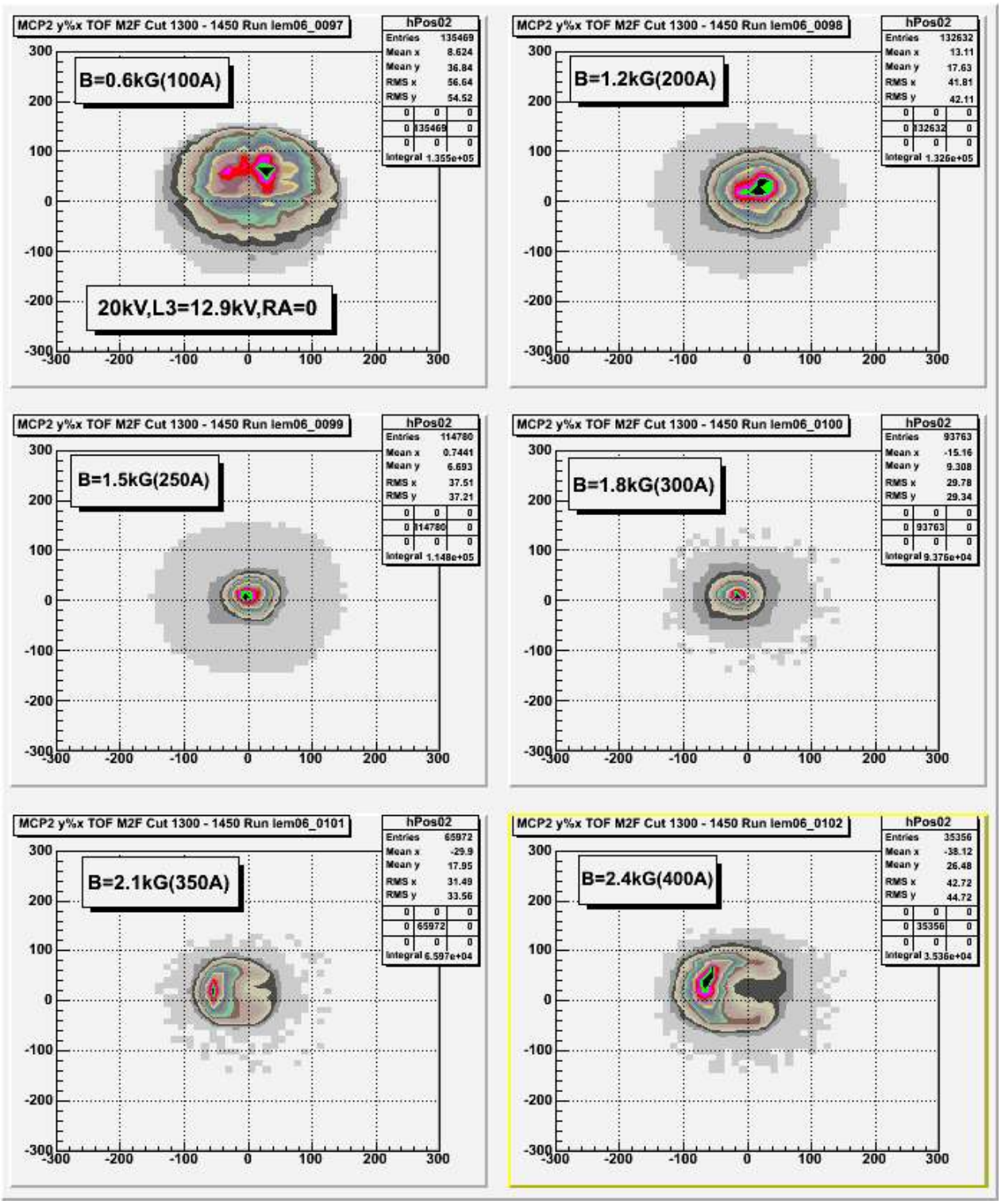

The figure above shows the influence of the magnetic field on the beam spot: for RA off the beam spot is large an shifted upwards at small B-field. With increasing B-field the beam spot start to move indicating that the LE-$\mu$ beam is not on axis. Above 1kG the beam spot starts to get smaller significantly, reaching best focusing of WEW at about 1.5 kG (15keV), where the beam spot is nearly centered now (alpha L/R and T/B close to 1). Above 1.5kG beam spot is getting larger again, moving up and to the left.

Measured beam spots for 15 and 20kV settings as a function of WEW B-field are shown on pages 2 and 3.

**Measured beam spots as a function of WEW field, 15kV settings:**



**Measured beam spots as a function of WEW field, 20kV settings:**



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File mcp2.data:

Comment:

LE-uSR meausurements on MCP2, April 2006

Run 136 = 135+136

This file can be converted into a root file by using readAscii.C; it is available as mcp2.root after conversion.

**Data:**

| Run | HV | RA | B | Berr | Asy | AsyErr | Rate | RateErr | ALR | ALRErr | ATB | ATBErr | PLR | PLRErr | PTB | PTBErr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 52 | 15 | 11 | 58.42 | 0.161 | 0.1226 | 0.0035 | 0.042 | 0.014 | 1.048 | 0.005 | 0.899 | 0.004 | 5.74 | 1.94 | -81.81 | 2.04 |
| 53 | 15 | 0 | 58.32 | 0.200 | 0.1003 | 0.0035 | 0.065 | 0.018 | 0.9596 | 0.0039 | 0.8042 | 0.0032 | -1.95 | 2.24 | -88.13 | 2.40 |
| 55 | 15 | 0 | 570.5 | 0.295 | 0.0758 | 0.0024 | 0 | 0.087 | 1.102 | 0.0053 | 0.8579 | 0.0040 | 81.58 | 3.54 | -4.99 | 3.41 |
| 56 | 15 | 0 | 1141 | 0.310 | 0.0811 | 0.0040 | 0.058 | 0.026 | 1.120 | 0.0053 | 0.965 | 0.0045 | 171.9 | 3.40 | 85.15 | 3.42 |
| 57 | 15 | 0 | 1713 | 0.376 | 0.0644 | 0.0040 | 0.050 | 0.032 | 0.944 | 0.0044 | 0.951 | 0.0044 | 263 | 4.12 | 166.1 | 4.24 |
| 58 | 15 | 0 | 2283 | 0.441 | 0.0453 | 0.0031 | 0.086 | 0.038 | 0.988 | 0.0035 | 0.831 | 0.0029 | 351.4 | 4.51 | 259.1 | 4.74 |
| 108 | 20 | 14.8 | 58.34 | 0.192 | 0.1242 | 0.0038 | 0.079 | 0.017 | 1.027 | 0.0045 | 0.911 | 0.0038 | 7.09 | 1.98 | -83.17 | 2.12 |
| 110 | 18 | 13.3 | 58.54 | 0.182 | 0.1224 | 0.0036 | 0.049 | 0.015 | 0.997 | 0.0043 | 0.911 | 0.0037 | 7.13 | 1.92 | -82.95 | 2.10 |
| 112 | 15 | 11 | 58.77 | 0.171 | 0.1223 | 0.0035 | 0.037 | 0.014 | 1.025 | 0.0043 | 0.904 | 0.0038 | 5.67 | 1.87 | -80.99 | 2.03 |
| 114 | 12 | 8.6 | 58.36 | 0.183 | 0.1130 | 0.0035 | 0.033 | 0.015 | 1.020 | 0.0043 | 0.905 | 0.0037 | 13.44 | 1.99 | -78.16 | 2.20 |
| 116 | 10 | 7.1 | 57.96 | 0.191 | 0.1113 | 0.0036 | 0.063 | 0.017 | 1.025 | 0.0042 | 0.923 | 0.0038 | 14.6 | 2.07 | -73.11 | 2.21 |
| 118 | 7.5 | 5.2 | 58.34 | 0.201 | 0.0929 | 0.0035 | 0.012 | 0.018 | 1.044 | 0.0044 | 0.909 | 0.0038 | 14.3 | 2.36 | -73.76 | 2.54 |
| 129 | 15 | 11 | 58.22 | 0.125 | 0.1178 | 0.0027 | 0.032 | 0.011 | 1.007 | 0.0034 | 0.907 | 0.0030 | 8.1 | 1.5 | -79.34 | 1.59 |
| 130 | 15 | 0 | 1142 | 0.158 | 0.0749 | 0.0014 | 0.046 | 0.014 | 1.080 | 0.0016 | 0.967 | 0.0014 | -195.3 | 1.21 | -287.6 | 1.21 |
| 131 | 15 | 0 | 1712 | 0.290 | 0.0600 | 0.0022 | 0.021 | 0.026 | 0.960 | 0.0022 | 0.955 | 0.0022 | 242.7 | 2.32 | 149.1 | 2.28 |
| 132 | 15 | 0 | 570.8 | 0.070 | 0.0923 | 0.0008 | 0.048 | 0.006 | 1.091 | 0.0009 | 0.8576 | 0.0007 | 81.54 | 0.54 | -9.86 | 0.54 |
| 133 | 15 | 0 | 285.6 | 0.083 | 0.0959 | 0.0013 | 0.046 | 0.007 | 1.036 | 0.0016 | 0.828 | 0.0013 | 36.8 | 0.94 | -53.58 | 0.93 |
| 134 | 15 | 0 | 143.2 | 0.084 | 0.1026 | 0.0014 | 0.071 | 0.0074 | 0.985 | 0.0016 | 0.821 | 0.0013 | 17.72 | 0.90 | -72.46 | 0.92 |
| 136 | 15 | 11 | 114.6 | 0.056 | 0.1183 | 0.0006 | 0.044 | 0.0026 | 1.022 | 0.0013 | 0.906 | 0.0012 | 21.92 | 0.63 | -68.43 | 0.64 |
| 144 | 15 | 11 | 24.51 | 0.071 | 0.1249 | 0.0015 | 0.065 | 0.006 | 1.016 | 0.0018 | 0.912 | 0.0016 | 1.55 | 0.83 | -88.46 | 0.78 |
| 145 | 15 | 11 | 46.85 | 0.068 | 0.1212 | 0.0014 | 0.053 | 0.006 | 1.016 | 0.0016 | 0.904 | 0.0015 | 7.73 | 0.73 | -82.03 | 0.78 |
| 146 | 15 | 11 | 69.24 | 0.065 | 0.1198 | 0.0013 | 0.052 | 0.006 | 1.020 | 0.0016 | 0.906 | 0.0014 | 12.4 | 0.71 | -77.04 | 0.75 |
| 147 | 15 | 11 | 91.91 | 0.067 | 0.1201 | 0.0013 | 0.052 | 0.006 | 1.012 | 0.0016 | 0.914 | 0.0014 | 15.4 | 0.73 | -72.51 | 0.76 |

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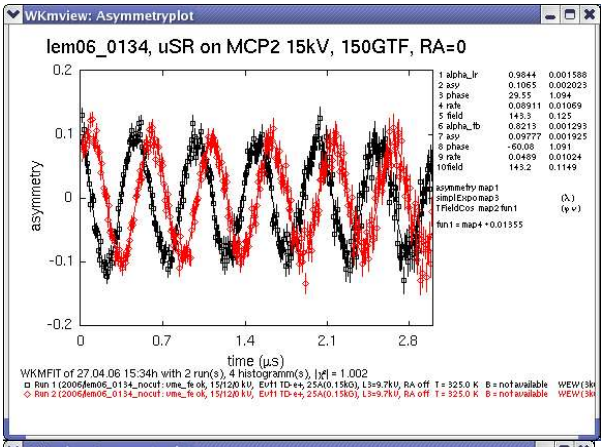
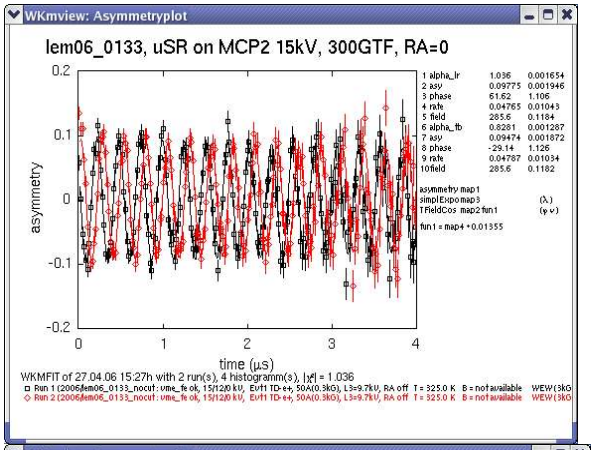
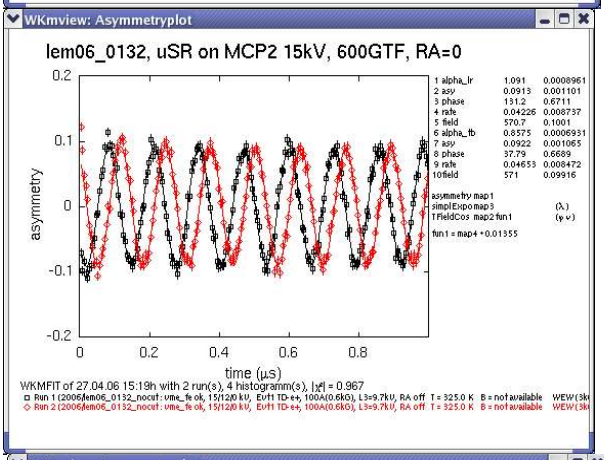
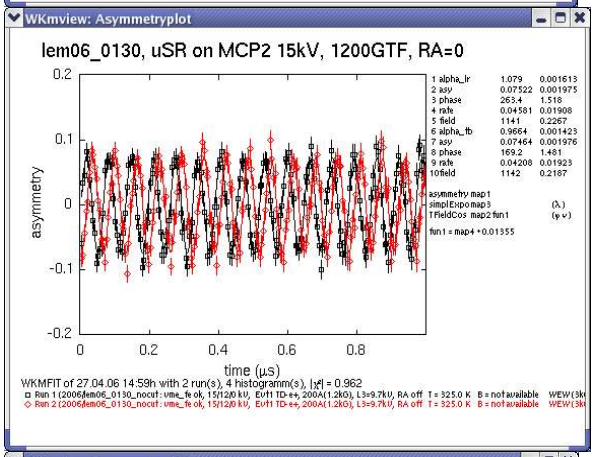
**Separate WKM fits to L/R and T/B asymmetries are summarized in the following table and in the figures on the next page:**

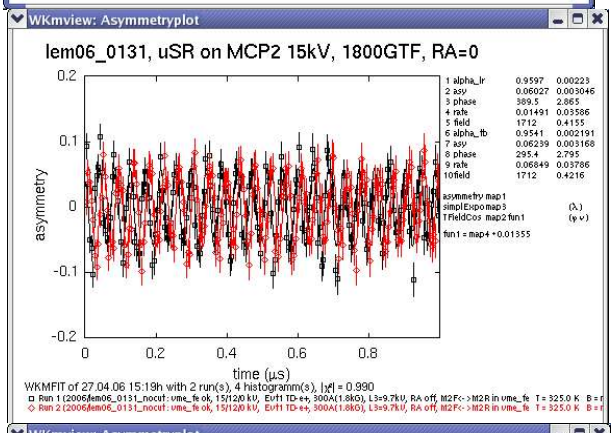
| *Run* | *HV/RA(kV)* | *B (kG/A)* | $A_{LR}/A_{TB}$ | $\alpha_{LR}/\alpha_{TB}$ | *Events* |
|---|---|---|---|---|---|
| 118 | 7.5/5.2 | 0.0582 / 10 | 0.0938 / 0.0918 | 1.045 / 0.908 | 1003k |
| 116 | 10.0/7.1 | 0.0580 / 10 | 0.1079 / 0.1137 | 1.026 / 0.923 | 1035k |
| 114 | 12.0/8.6 | 0.0583 / 10 | 0.1192 / 0.1084 | 1.019 / 0.904 | 1002k |
| 52 | 15/11 | 0.0584 / 10 | 0.1194 / 0.1244 | 1.030 / 0.898 | 915k |
| 112 | 15/11 | 0.0587 / 10 | 0.1253 / 0.1191 | 1.026 / 0.903 | 1005k |
| 110 | 18/13.26 | 0.0585 / 10 | 0.1280 / 0.1178 | 0.997 / 0.910 | 1004k |
| 108 | 20/14.77 | 0.0584 / 10 | 0.1237 / 0.1251 | 1.027 / 0.911 | 1002k |
| 53 | 15/0 | 0.0583 / 10 | 0.1054 / 0.0967 | 0.948 / 0.802 | 1106k |
| 134 | 15/0 | 0.1433 / 25 | 0.1065 / 0.0978 | 0.984 / 0.821 | 6969k |
| 133 | 15/0 | 0.2856 / 50 | 0.0978 / 0.0947 | 1.036 / 0.828 | 7103k |
| 55 | 15/0 | 0.5710 / 100 | 0.0745 / 0.0781 | 1.099 / 0.847 | 756k |
| 132 | 15/0 | 0.5708 / 100 | 0.0913 / 0.0922 | 1.091 / 0.857 | 31031k |
| 56 | 15/0 | 1.1415 / 200 | 0.0857 / 0.0751 | 1.095 / 0.961 | 764k |
| 130 | 15/0 | 1.1415 / 200 | 0.0752 / 0.0746 | 1.079 / 0.966 | 9004k |
| 57 | 15/0 | 1.7125 / 300 | 0.0675 / 0.0614 | 0.948 / 0.952 | 784k |
| 131 | 15/0 | 1.7120 / 300 | 0.0603 / 0.0624 | 0.960 / 0.954 | 3705k |
| 58 | 15/0 | 2.2825 / 400 | 0.0495 / 0.0405 | 0.982 / 0.829 | 1398k |
| 144 | 15/11 | 0.0245 / 4 | 0.1268 / 0.1213 | 1.016 / 0.911 | 7001k |
| 145 | 15/11 | 0.0468 / 8 | 0.1196 / 0.1221 | 1.016 / 0.904 | 7005k |
| 129 | 15/11 | 0.0582 / 10 | 0.1167 / 0.1182 | 1.008 / 0.908 | 1527k |
| 146 | 15/11 | 0.0692 / 12 | 0.1163 / 0.1214 | 1.020 / 0.906 | 7004k |
| 147 | 15/11 | 0.0919 / 16 | 0.1197 / 0.1201 | 1.012 / 0.914 | 7005k |
| 135+136 | 15/11 | 0.1146 / 20 | 0.1199 / 0.1164 | 1.022 / 0.906 | 10005k |

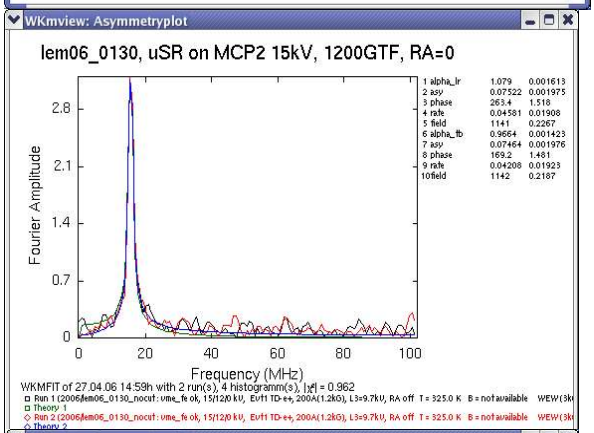

WKmview: Asymmetryplot
lem06_0134, uSR on MCP2 15kV, 150GTF, RA=0
asymmetry
time (µs)
WKMFIT of 27.04.06 15:34h with 2 run(s), 4 histogramm(s), |χ²| = 1.002

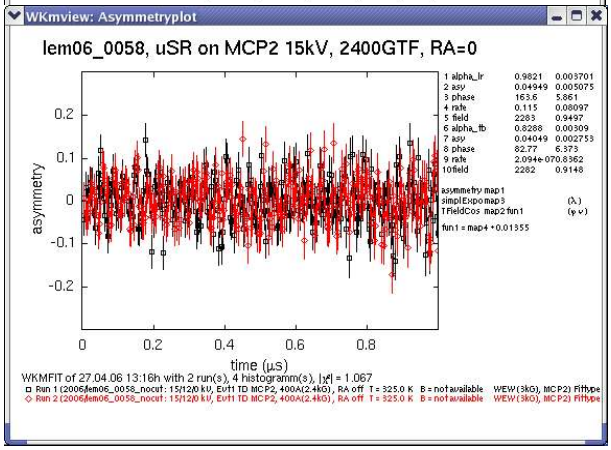

WKmview: Asymmetryplot
lem06_0133, uSR on MCP2 15kV, 300GTF, RA=0
asymmetry
time (µs)
WKMFIT of 27.04.06 15:27h with 2 run(s), 4 histogramm(s), |χ²| = 1.036

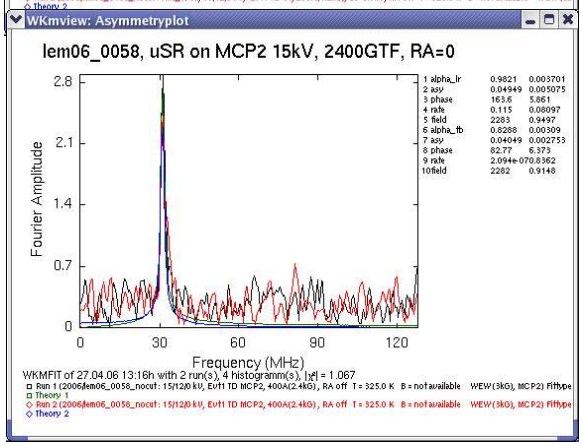

WKmview: Asymmetryplot
lem06_0132, uSR on MCP2 15kV, 600GTF, RA=0
asymmetry
time (µs)
WKMFIT of 27.04.06 15:19h with 2 run(s), 4 histogramm(s), |χ²| = 0.967


WKmview: Asymmetryplot
lem06_0130, uSR on MCP2 15kV, 1200GTF, RA=0
asymmetry
time (µs)
WKMFIT of 27.04.06 14:59h with 2 run(s), 4 histogramm(s), |χ²| = 0.962


WKmview: Asymmetryplot
lem06_0131, uSR on MCP2 15kV, 1800GTF, RA=0
asymmetry
time (µs)
WKMFIT of 27.04.06 15:19h with 2 run(s), 4 histogramm(s), |χ²| = 0.990


WKmview: Asymmetryplot
lem06_0130, uSR on MCP2 15kV, 1200GTF, RA=0
Fourier Amplitude
Frequency (MHz)
WKMFIT of 27.04.06 14:59h with 2 run(s), 4 histogramm(s), |χ²| = 0.962


WKmview: Asymmetryplot
lem06_0058, uSR on MCP2 15kV, 2400GTF, RA=0
asymmetry
time (µs)
WKMFIT of 27.04.06 13:16h with 2 run(s), 4 histogramm(s), |χ²| = 1.067


WKmview: Asymmetryplot
lem06_0058, uSR on MCP2 15kV, 2400GTF, RA=0
Fourier Amplitude
Frequency (MHz)
WKMFIT of 27.04.06 13:16h with 2 run(s), 4 histogramm(s), |χ²| = 1.067