sr_unit_conv

Unknown Author

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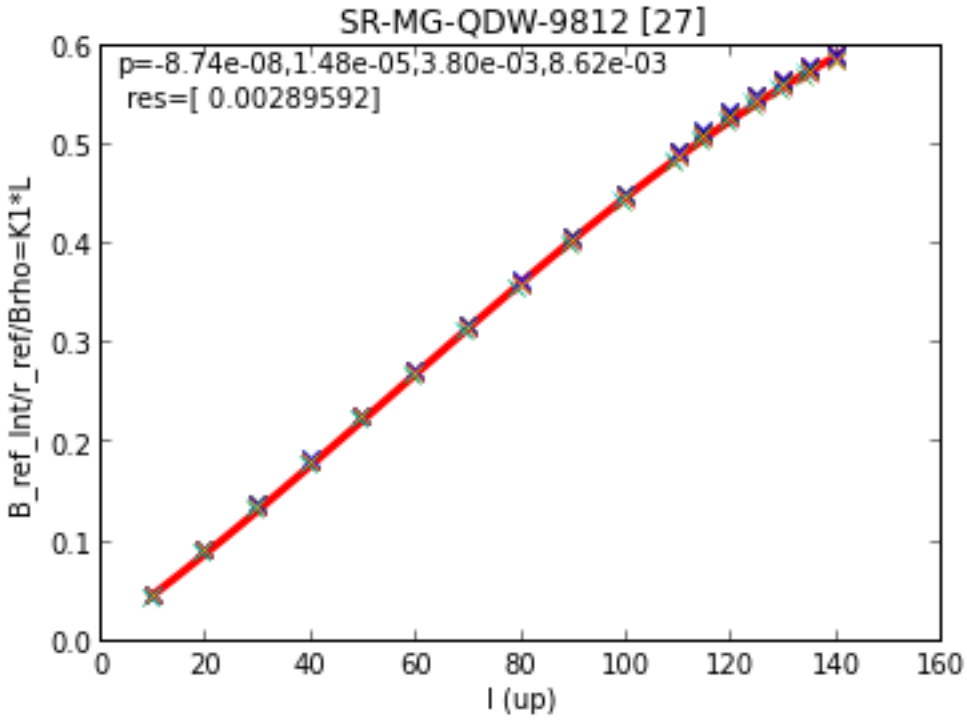
In [10]:
```
import conv_magnet_measurement as cmm
```

In [11]:
```
reload(cmm)
rec = cmm.read_alignment("yu201308_alignment_error_summary_er.xls", cmm.SRCDIR)
```

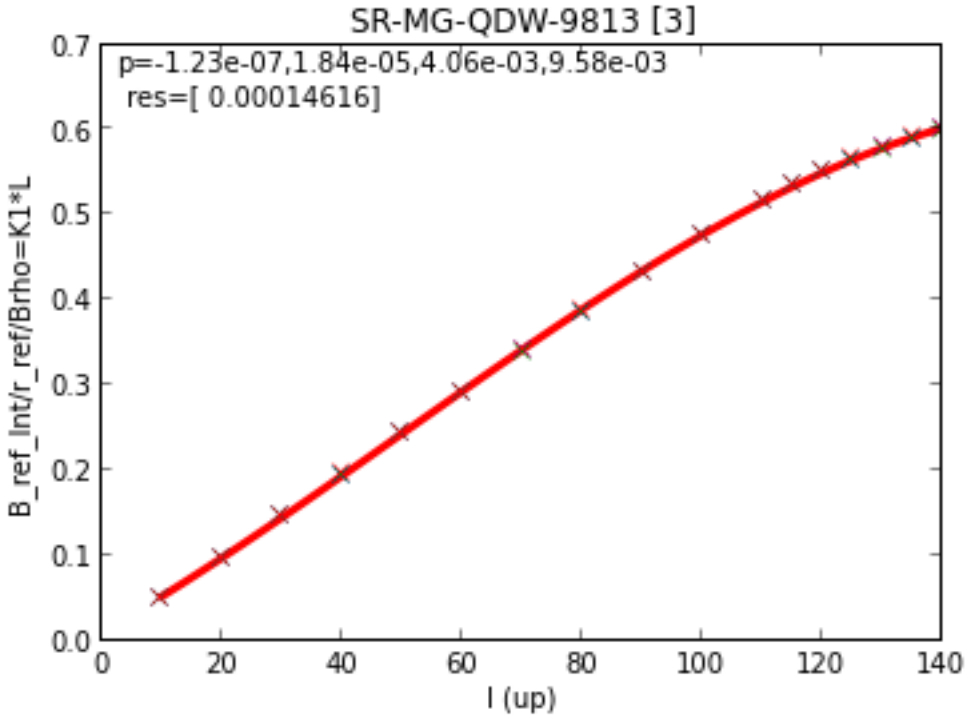
In [12]:
```
cmm.fit_groups(rec, "Quadrupole")
```

```
[SR-MG-QDW-9812:27]
polynomial: (I->k) -8.73592526522e-08, 1.47729412734e-05,
0.00379637854215, 0.0086244541355
polynomial: (k->I) 299.27355373, -227.372895784, 270.496007508,
-2.59592759427
elements: ql3g6c30b, qh3g6c01b, ql3g6c02b, qh3g6c03b, ql3g6c04b,
qh3g6c05b, ql3g6c06b, ql3g6c08b, qh3g6c09b, ql3g6c10b, qh3g6c11b,
ql3g6c12b, qh3g6c13b, ql3g6c14b, qh3g6c15b, ql3g6c16b, ql3g6c18b,
qh3g6c19b, ql3g6c20b, qh3g6c21b, ql3g6c22b, qh3g6c23b, ql3g6c24b,
qh3g6c25b, ql3g6c26b, ql3g6c28b, qh3g6c29b
```

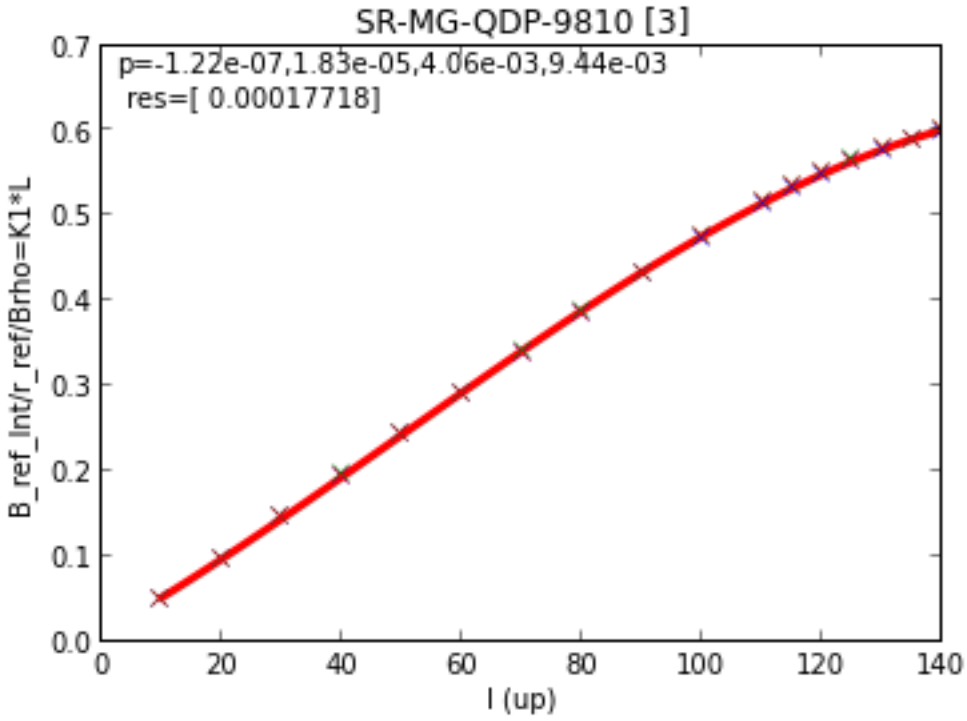



```
[SR-MG-QDW-9813:3]
polynomial: (I->k) -1.22551322566e-07, 1.83974703349e-05,
```

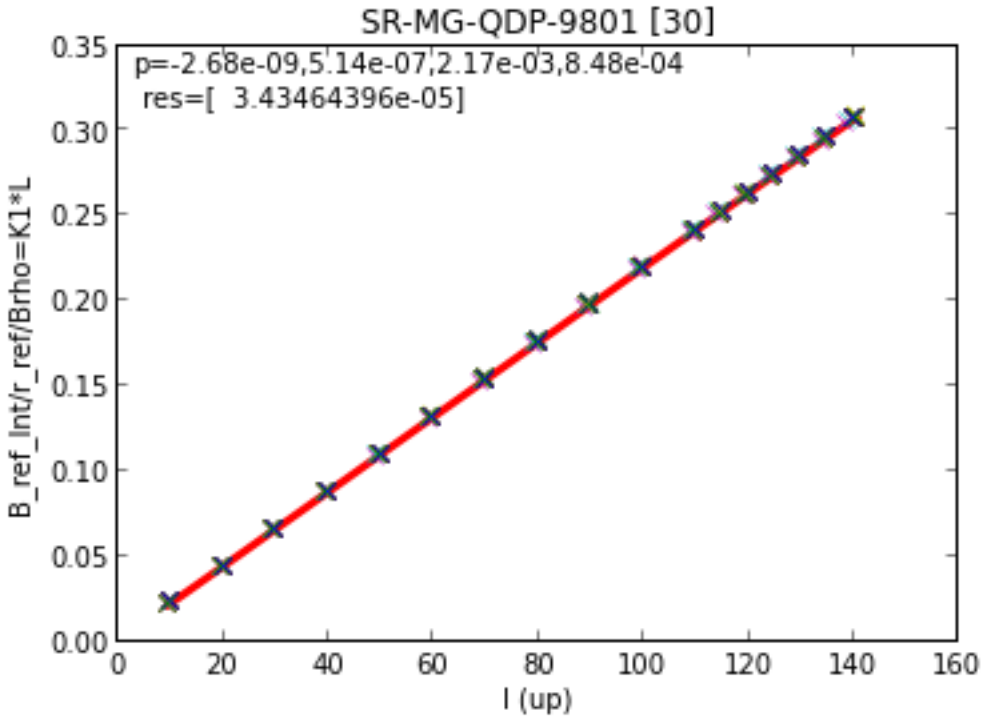
0.0040570389547, 0.00957643279829
polynomial: (k->I) 457.482377813, -348.542136353, 280.76605012,
-4.13155835177
elements: qh3g6c07b, qh3g6c17b, qh3g6c27b



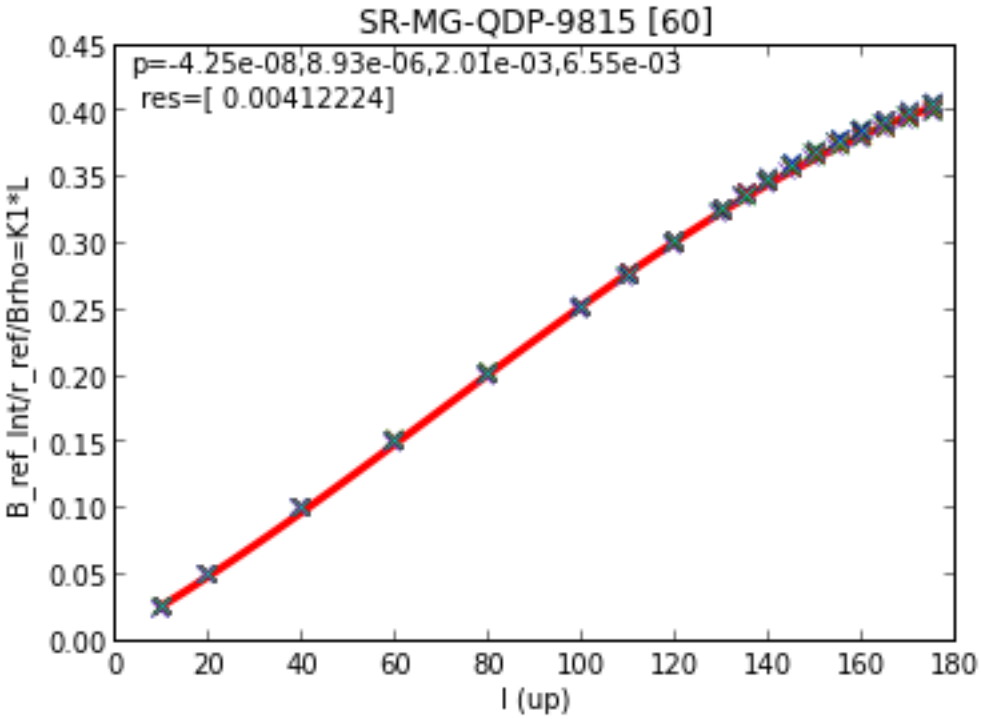
[SR-MG-QDP-9810:3]
polynomial: (I->k) -1.22189215683e-07, 1.82768599163e-05,
0.00406260155522, 0.00943906021712
polynomial: (k->I) 458.783116586, -348.560147143, 280.671858649,
-4.10557447593
elements: qh3g2c08a, qh3g2c18a, qh3g2c28a



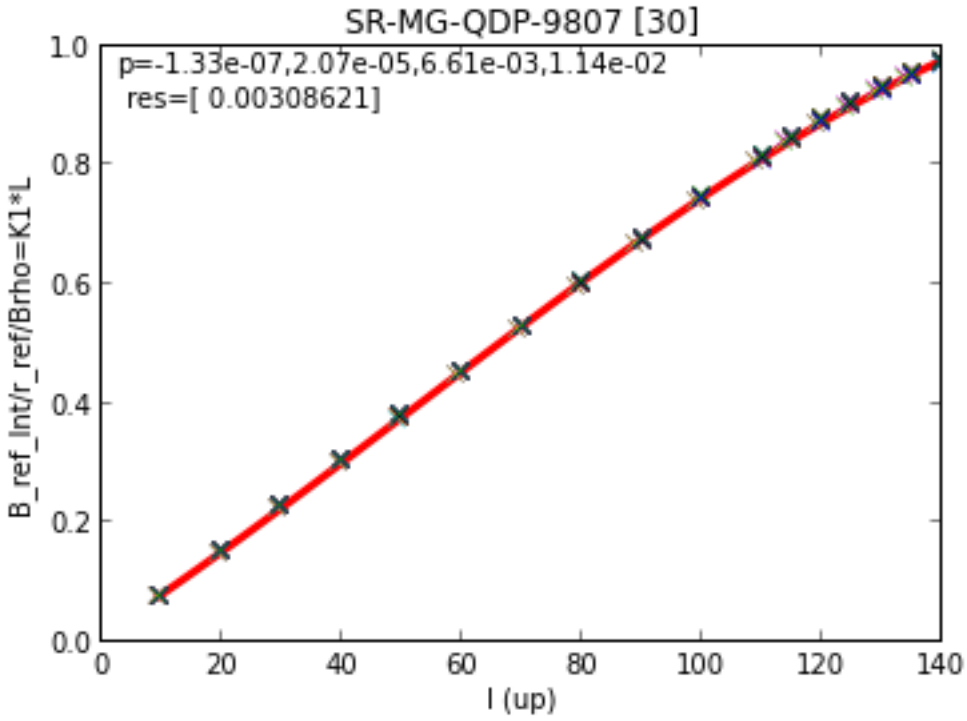
[SR-MG-QDP-9801:30]
polynomial: (I->k) -2.68462265083e-09, 5.14498463126e-07, 0.00216644500193, 0.00084811854444
polynomial: (k->I) 115.647682139, -48.7485690681, 461.544596274, -0.389067804687
elements: qm1g4c30b, qm1g4c01b, qm1g4c02b, qm1g4c03b, qm1g4c04b, qm1g4c05b, qm1g4c06b, qm1g4c07b, qm1g4c08b, qm1g4c09b, qm1g4c10b, qm1g4c11b, qm1g4c12b, qm1g4c13b, qm1g4c14b, qm1g4c15b, qm1g4c16b, qm1g4c17b, qm1g4c18b, qm1g4c19b, qm1g4c20b, qm1g4c21b, qm1g4c22b, qm1g4c23b, qm1g4c24b, qm1g4c25b, qm1g4c26b, qm1g4c27b, qm1g4c28b, qm1g4c29b



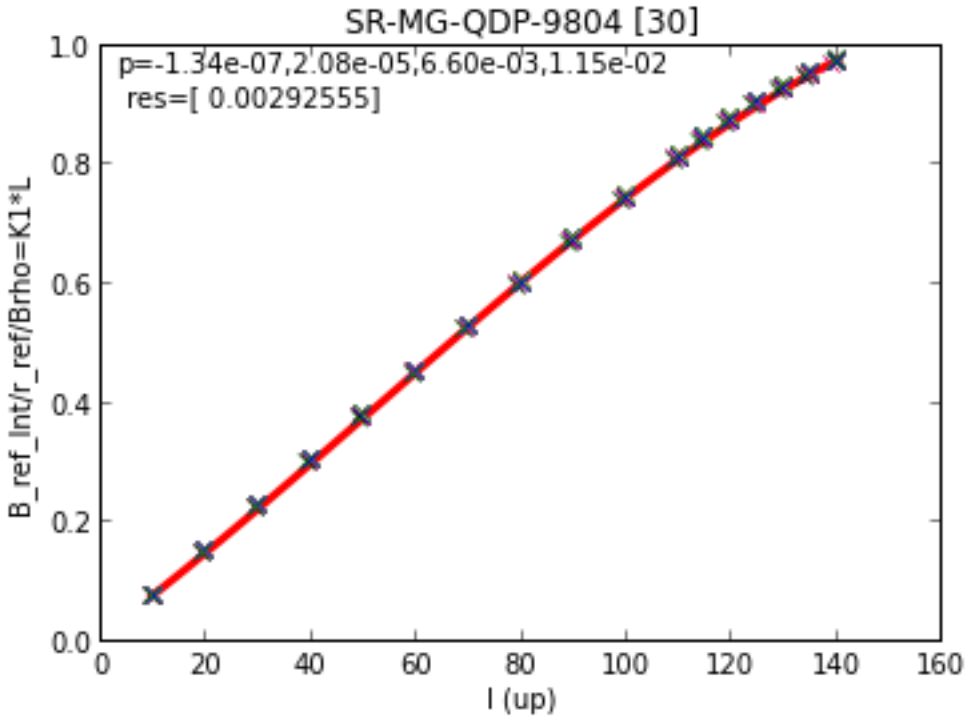
[SR-MG-QDP-9815:60]
polynomial: (I->k) -4.25486013555e-08, 8.92761875268e-06, 0.00201157015447, 0.00654502148912
polynomial: (k->I) 1688.27008412, -891.424590746, 523.502376436, -3.99491406454
elements: qm2g4c30a, qm2g4c30b, qm2g4c01a, qm2g4c01b, qm2g4c02a, qm2g4c02b, qm2g4c03a, qm2g4c03b, qm2g4c04a, qm2g4c04b, qm2g4c05a, qm2g4c05b, qm2g4c06a, qm2g4c06b, qm2g4c07a, qm2g4c07b, qm2g4c08a, qm2g4c08b, qm2g4c09a, qm2g4c09b, qm2g4c10a, qm2g4c10b, qm2g4c11a, qm2g4c11b, qm2g4c12a, qm2g4c12b, qm2g4c13a, qm2g4c13b, qm2g4c14a, qm2g4c14b, qm2g4c15a, qm2g4c15b, qm2g4c16a, qm2g4c16b, qm2g4c17a, qm2g4c17b, qm2g4c18a, qm2g4c18b, qm2g4c19a, qm2g4c19b, qm2g4c20a, qm2g4c20b, qm2g4c21a, qm2g4c21b, qm2g4c22a, qm2g4c22b, qm2g4c23a, qm2g4c23b, qm2g4c24a, qm2g4c24b, qm2g4c25a, qm2g4c25b, qm2g4c26a, qm2g4c26b, qm2g4c27a, qm2g4c27b, qm2g4c28a, qm2g4c28b, qm2g4c29a, qm2g4c29b



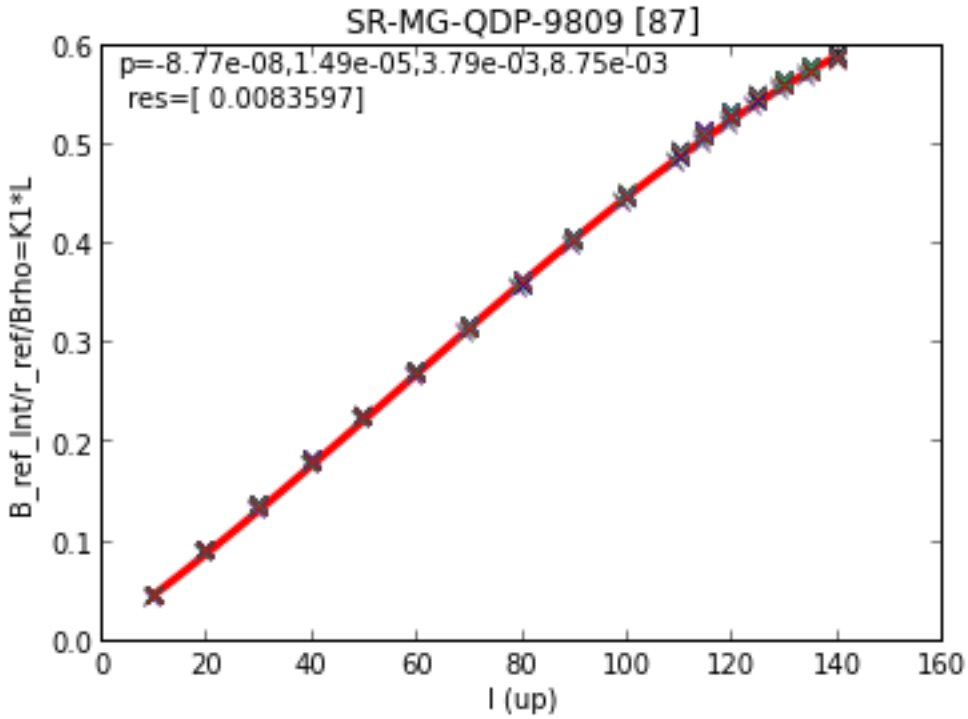
[SR-MG-QDP-9807:30]
polynomial: (I->k) -1.33397544515e-07, 2.06737680246e-05, 0.00660696022773, 0.011408853782
polynomial: (k->I) 65.9388119475, -78.9699457572, 159.563034948, -2.3826745187
elements: ql2g6c30b, qh2g6c01b, ql2g6c02b, qh2g6c03b, ql2g6c04b, qh2g6c05b, ql2g6c06b, qh2g6c07b, ql2g6c08b, qh2g6c09b, ql2g6c10b, qh2g6c11b, ql2g6c12b, qh2g6c13b, ql2g6c14b, qh2g6c15b, ql2g6c16b, qh2g6c17b, ql2g6c18b, qh2g6c19b, ql2g6c20b, qh2g6c21b, ql2g6c22b, qh2g6c23b, ql2g6c24b, qh2g6c25b, ql2g6c26b, qh2g6c27b, ql2g6c28b, qh2g6c29b



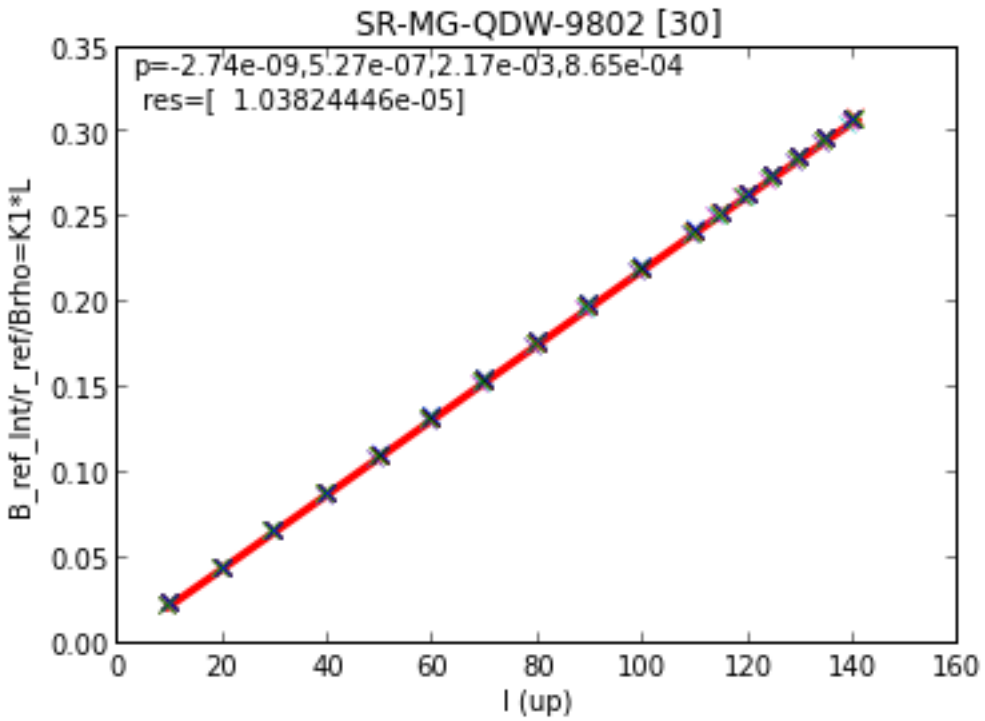
[SR-MG-QDP-9804:30]
polynomial: (I->k) -1.33551096167e-07, 2.07602546981e-05, 0.00660431919031, 0.0115367026771
polynomial: (k->I) 65.6749785569, -78.8888625238, 159.55309936, -2.39987766735
elements: qh2g2c30a, ql2g2c01a, qh2g2c02a, ql2g2c03a, qh2g2c04a, ql2g2c05a, qh2g2c06a, ql2g2c07a, qh2g2c08a, ql2g2c09a, qh2g2c10a, ql2g2c11a, qh2g2c12a, ql2g2c13a, qh2g2c14a, ql2g2c15a, qh2g2c16a, ql2g2c17a, qh2g2c18a, ql2g2c19a, qh2g2c20a, ql2g2c21a, qh2g2c22a, ql2g2c23a, qh2g2c24a, ql2g2c25a, qh2g2c26a, ql2g2c27a, qh2g2c28a, ql2g2c29a



[SR-MG-QDP-9809:87]
polynomial: (I->k) -8.7656108294e-08, 1.48834999714e-05, 0.0037895927257, 0.00874862418049
polynomial: (k->I) 299.737665811, -228.67124984, 270.905942203, -2.6307917921
elements: qh1g2c30a, qh3g2c30a, ql1g6c30b, ql1g2c01a, ql3g2c01a, qh1g6c01b, qh1g2c02a, qh3g2c02a, ql1g6c02b, ql1g2c03a, ql3g2c03a, qh1g6c03b, qh1g2c04a, qh3g2c04a, ql1g6c04b, ql1g2c05a, ql3g2c05a, qh1g6c05b, qh1g2c06a, qh3g2c06a, ql1g6c06b, ql1g2c07a, ql3g2c07a, qh1g6c07b, qh1g2c08a, ql1g6c08b, ql1g2c09a, ql3g2c09a, qh1g6c09b, qh1g2c10a, qh3g2c10a, ql1g6c10b, ql1g2c11a, ql3g2c11a, qh1g6c11b, qh1g2c12a, qh3g2c12a, ql1g6c12b, ql1g2c13a, ql3g2c13a, qh1g6c13b, qh1g2c14a, qh3g2c14a, ql1g6c14b, ql1g2c15a, ql3g2c15a, qh1g6c15b, qh1g2c16a, qh3g2c16a, ql1g6c16b, ql1g2c17a, ql3g2c17a, qh1g6c17b, qh1g2c18a, ql1g6c18b, ql1g2c19a, ql3g2c19a, qh1g6c19b, qh1g2c20a, qh3g2c20a, ql1g6c20b, ql1g2c21a, ql3g2c21a, qh1g6c21b, qh1g2c22a, qh3g2c22a, ql1g6c22b, ql1g2c23a, ql3g2c23a, qh1g6c23b, qh1g2c24a, qh3g2c24a, ql1g6c24b, ql1g2c25a, ql3g2c25a, qh1g6c25b, qh1g2c26a, qh3g2c26a, ql1g6c26b, ql1g2c27a, ql3g2c27a, qh1g6c27b, qh1g2c28a, ql1g6c28b, ql1g2c29a, ql3g2c29a, qh1g6c29b



[SR-MG-QDW-9802:30]
polynomial: (I->k) -2.74015275599e-09, 5.26622255264e-07, 0.00216504992718, 0.0008649242176
polynomial: (k->I) 119.63240545, -50.5807652341, 461.912892014, -0.398969338834
elements: qm1g4c30a, qm1g4c01a, qm1g4c02a, qm1g4c03a, qm1g4c04a, qm1g4c05a, qm1g4c06a, qm1g4c07a, qm1g4c08a, qm1g4c09a, qm1g4c10a, qm1g4c11a, qm1g4c12a, qm1g4c13a, qm1g4c14a, qm1g4c15a, qm1g4c16a, qm1g4c17a, qm1g4c18a, qm1g4c19a, qm1g4c20a, qm1g4c21a, qm1g4c22a, qm1g4c23a, qm1g4c24a, qm1g4c25a, qm1g4c26a, qm1g4c27a, qm1g4c28a, qm1g4c29a




```
<matplotlib.figure.Figure at 0x42c8f50>
```

In [13]:
```
cmm.fit_groups(rec, "Sextupole")
```

```
[SR-MG-STP-9801:166]
polynomial: (I->k) -1.97532296383e-07, 3.42345121898e-05,
0.0813202363273, 0.0482245551815
polynomial: (k->I) 0.00414956924262, -0.0600752995329, 12.2950852935,
-0.58811623546
elements: sh1g2c30a, sh3g2c30a, sh4g2c30a, sm1g4c30a, sm1g4c30b,
sl2g6c30b, sl1g6c30b, sl1g2c01a, sl2g2c01a, sl3g2c01a, sm1g4c01b,
sh1g6c01b, sh1g2c02a, sh3g2c02a, sh4g2c02a, sm1g4c02b, sl2g6c02b,
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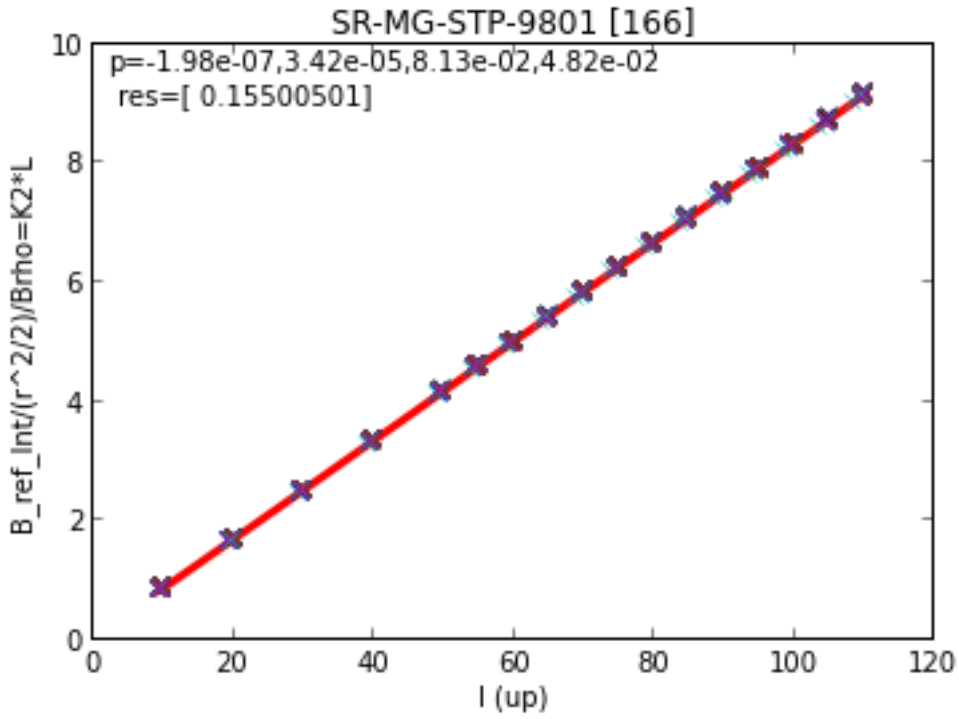

[SR-MG-STP-9802:74]
polynomial: (I->k) -1.78240267197e-07, 2.39873004842e-05,
0.082405434406, 0.0384613674565
polynomial: (k->I) 0.00366392548262, -0.0412442221646, 12.1339559047,
-0.463174777343
elements: sl3g6c30b, sm1g4c01a, sh4g6c01b, sh3g6c01b, sm1g4c02a,
sl3g6c02b, sm1g4c03a, sh4g6c03b, sh3g6c03b, sm1g4c04a, sl3g6c04b,
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sl3g6c26b, sm1g4c27a, sh4g6c27b, sh3g6c27b, sm1g4c28a, sl3g6c28b,
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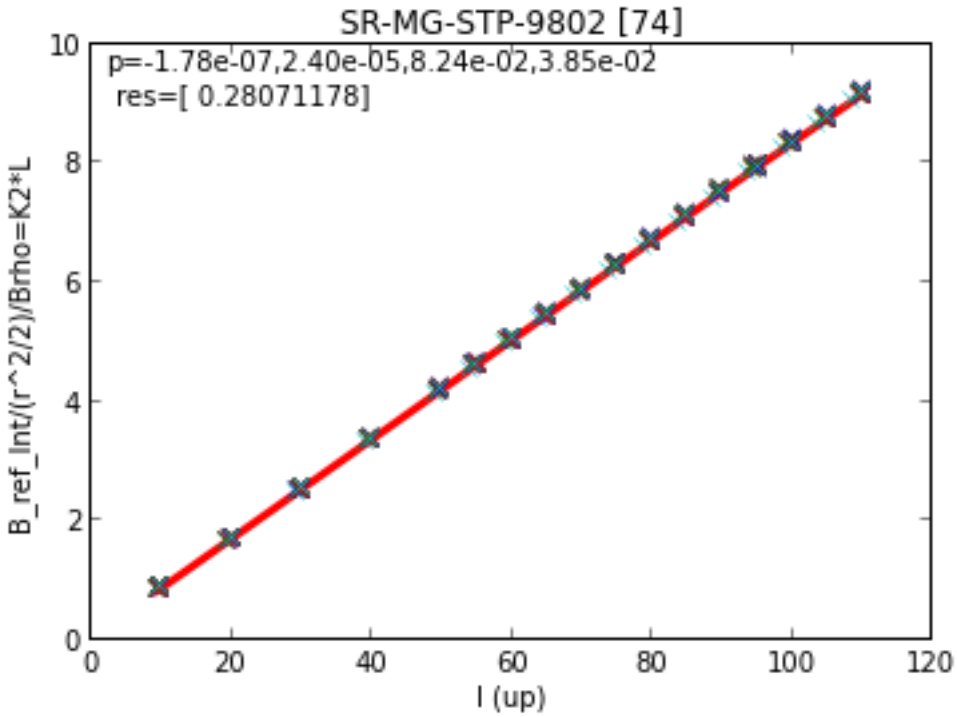
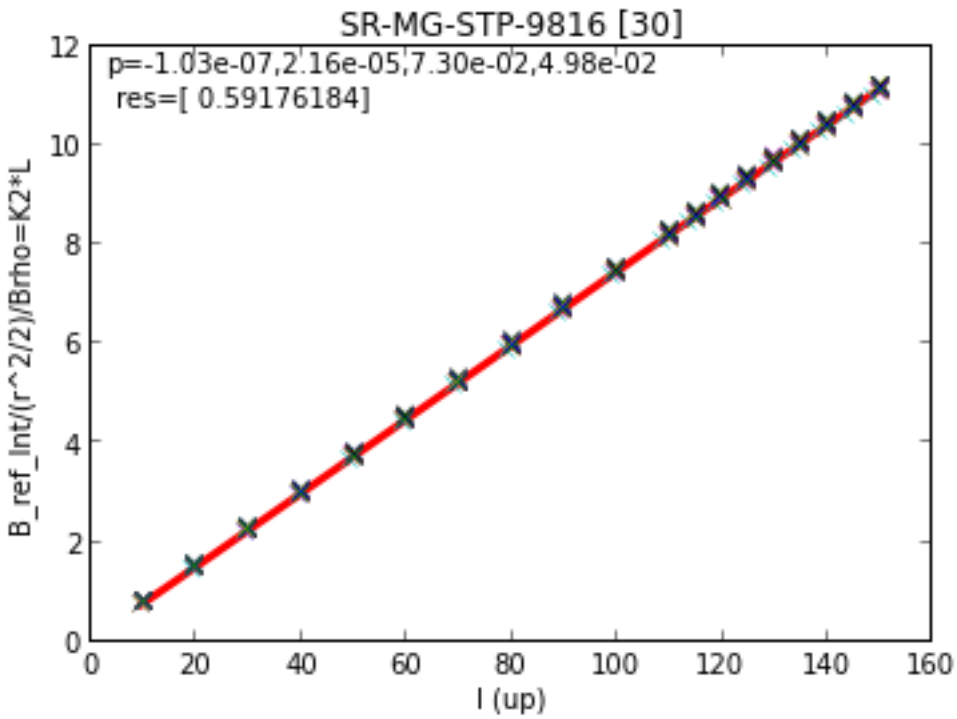


[SR-MG-STP-9816:30]
polynomial: (I->k) -1.0281835055e-07, 2.16129819011e-05, 0.0729927960817, 0.0498131362915
polynomial: (k->I) 0.00311753177707, -0.0490002535964, 13.6827114075, -0.660777102617
elements: sm2g4c30b, sm2g4c01b, sm2g4c02b, sm2g4c03b, sm2g4c04b, sm2g4c05b, sm2g4c06b, sm2g4c07b, sm2g4c08b, sm2g4c09b, sm2g4c10b, sm2g4c11b, sm2g4c12b, sm2g4c13b, sm2g4c14b, sm2g4c15b, sm2g4c16b, sm2g4c17b, sm2g4c18b, sm2g4c19b, sm2g4c20b, sm2g4c21b, sm2g4c22b, sm2g4c23b, sm2g4c24b, sm2g4c25b, sm2g4c26b, sm2g4c27b, sm2g4c28b, sm2g4c29b




```
<matplotlib.figure.Figure at 0x3cf00d0>
```

In [14]:
```
#for r in rec:
#    print r
```

In []:
```
```