Linking Quadrupole to Segment

v.16.15.12
05/26/23

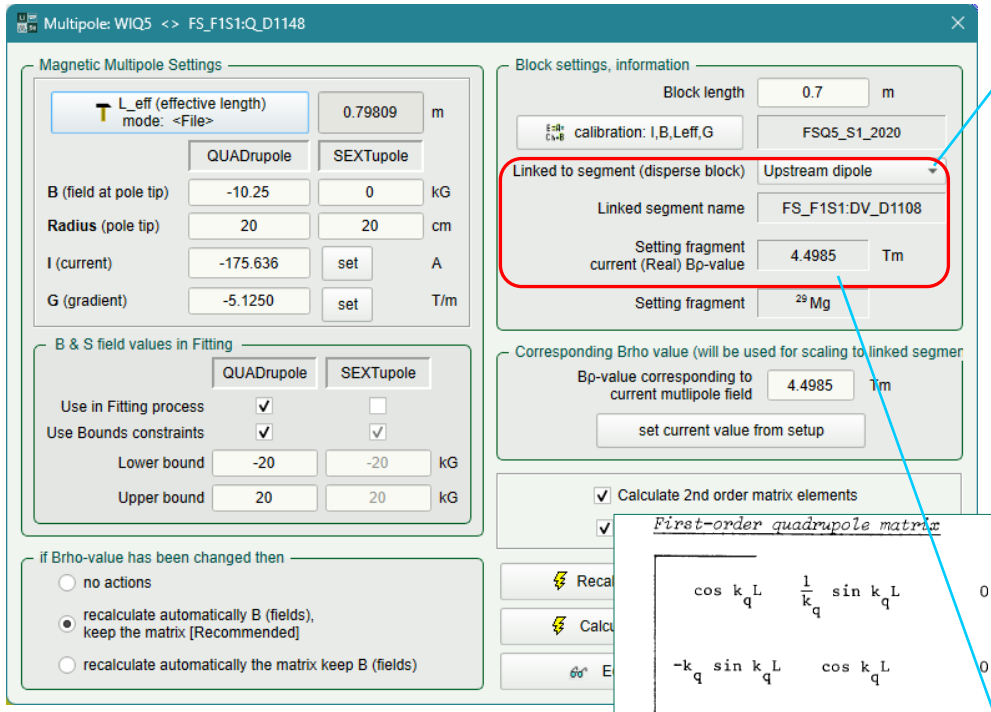
ARIS saveset

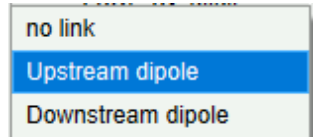
'e22501_198Pt/saveset/2023_01_21_10h12m29.txt

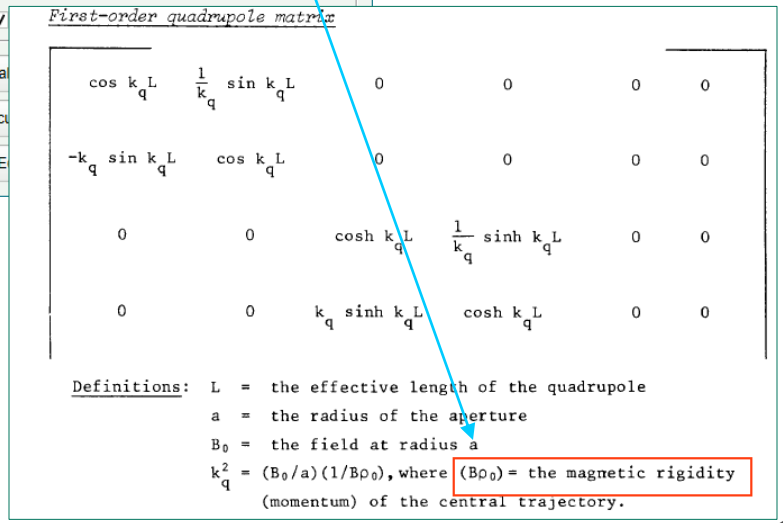
Save As | Print | PrintView | Consolas | 9

OCT_D1035	1.058	0.000	-0.000-00	-0.000-00	0.0000	-0.0075	OCT_D1035
OCT_D1137	1.654	0.000	-0.000-00	-0.000-00	0.0000	-0.0047	OCT_D1137
OCT_D1148	3.070	0.000	-0.000-00	-0.000-00	0.0000	-0.0082	OCT_D1148
OCT_D1170	0.000	0.000	-0.000-00	-0.000-00	0.0000	-0.0074	OCT_D1170
----------F1S2-BTS02 ----------							
Q_D1195	4.770	4.770	1.000000	1.000000	137.5275	137.5487	Q_D1195
Q_D1207	-4.857	-4.954	1.020000	1.020000	-160.0133	-160.0336	Q_D1207
Q_D1218	3.430	3.430	1.000000	1.000000	97.4303	97.4250	Q_D1218
DV_D1246	-0.863	-0.840	0.973001	0.972646	-109.6178	-109.6394	DV_D1246
Q_D1288	0.740	0.740	1.000000	1.000000	20.7819	20.7677	Q_D1288
Q_D1299	-2.367	-2.367	1.000000	1.000000	-75.7597	-75.7777	Q_D1299
Q_D1311	1.806	1.806	1.000000	1.000000	51.7411	51.7416	Q_D1311
S_D1195	2.569	0.000	-0.000-00	-0.000-00	0.0000	-0.0103	S_D1195
S_D1207	-2.108	0.000	-0.000-00	-0.000-00	0.0000	-0.0037	S_D1207
S_D1218	1						S_D1218
S_D1288	1						S_D1288
S_D1299	-1						S_D1299
S_D1311	6						S_D1311
OCT_D1195	2						OCT_D1195
OCT_D1207	-2						OCT_D1207
OCT_D1218	1.947	0.000	-0.000-00	-0.000-00	0.0000	-0.0213	OCT_D1218
OCT_D1288	1.627	0.000	-0.000-00	-0.000-00	0.0000	-0.0034	OCT_D1288
OCT_D1299	-2.378	0.000	-0.000-00	-0.000-00	0.0000	-0.0042	OCT_D1299
OCT_D1311	3.236	0.000	-0.000-00	-0.000-00	0.0000	-0.0041	OCT_D1311
----------F1S2-BTS03 ----------							
Q_D1338	0.839	0.839	1.000000	1.000000	24.3924	24.3961	Q_D1338
Q_D1349	-1.824	-1.824	1.000000	1.000000	-58.3932	-58.4054	Q_D1349

dipole defines rigidity of entire segment 3Q+D+3Q







Linking Quadrupole to Segment : info

Optics settings: Dipoles & Quads

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! FILE: C:/temp/eL_ARIS_v2_run1306read.lpp;   Optics settings: Dipoles & Quads
 1    2                3                      4          5       6       7          8          9          1
N     Block name       Official name          Kind of    Start   Length  DriftMode  B0(kG)     Br-corrsp Ra
or                                            Block      (m)     (m)     Angle*                Br-dip*   R(
1.    dummy            dummy_preseparator     Dipole     0.000   0.000   +0.0 *     +14.511    4.4985*   3.
2.    WIQ1             FS_F1S1:Q_D1013        Drift      0.887   0.826   QUAD-d      +5.468    4.4985    10
3.    WIQ2             FS_F1S1:Q_D1024        Drift      1.850   1.050   QUAD-d      -9.295    4.4985    13
4.    WIQ3             FS_F1S1:Q_D1035        Drift      2.950   1.050   QUAD-d      +6.231    4.4985    13
5.    FSD1_SCD1        FS_F1S1:DV_D1064       Dipole     5.400   2.168   +30.0 *    +10.866    4.4985*   4.
6.    FSD1_SCD2        FS_F1S1:DV_D1108       Dipole     9.844   2.170   -30.0 *    +10.853    4.4985*   4.
7.    WIQ4             FS_F1S1:Q_D1137        Drift      13.463  0.700   QUAD-u      +8.534    4.4985    20
8.    WIQ5             FS_F1S1:Q_D1148        Drift      14.551  0.700   QUAD-u     -10.250    4.4985    20
9.    WIQ7             FS_F1S1:Q_D1170        Drift      16.838  0.700   QUAD-u      +5.584    4.4985    20
10.   CIQT1A           FS_F1S2:Q_D1195        Drift      19.353  0.650   QUAD-d     +11.583    4.1833    19
11.   CIQT1B           FS_F1S2:Q_D1207        Drift      20.401  0.800   QUAD-d     -11.568    4.1833    19
12.   CIQT1C           FS_F1S2:Q_D1218        Drift      21.598  0.650   QUAD-d      +8.577    4.1833    19
13.   FSD1_SCD3        FS_F1S2:DV_D1246       Dipole     23.045  3.596   -50.0 *    +10.156    4.1833*   4.
14.   CIQT2A           FS_F1S2:Q_D1288        Drift      28.732  0.650   QUAD-u      +1.672    4.1833    19
15.   CIQT2B           FS_F1S2:Q_D1299        Drift      29.779  0.800   QUAD-u      -5.381    4.1833    19
16.   CIQT2C           FS_F1S2:Q_D1311        Drift      30.976  0.650   QUAD-u      +5.090    4.1833    19
17.   CIQT3A           FS_F1S2:Q_D1338        Drift      33.739  0.650   QUAD-d      +1.887    4.1833    19
18.   CIQT3B           FS_F1S2:Q_D1349        Drift      34.786  0.800   QUAD-d      -5.030    4.1833    19
19.   CIQT3C           FS_F1S2:Q_D1361        Drift      35.983  0.650   QUAD-d      +3.279    4.1833    19
20    FSD2_SCD4        FS_F1S2:DV_D1402       Dipole     38.725  3.581   +50.0 *    +10.193    4.1833*   4.
21.   CIQT4A           FS_F1S2:Q_D1430        Drift      43.040  0.650   QUAD-u      +2.859    4.1833    15
22.   CIQT4B           FS_F1S2:Q_D1441        Drift      44.083  0.800   QUAD-u      -6.264    4.1833    15
23.   CIQT4C           FS_F1S2:Q_D1453        Drift      45.277  0.650   QUAD-u      +3.499    4.1833    15
24.   Q_D1476          FS_F2S1:Q_D1476        Drift      47.772  0.400   QUAD-d     +11.037    4.1833    15
25.   Q_D1484          FS_F2S1:Q_D1484        Drift      48.379  0.700   QUAD-d     -13.546    4.1833    15
26.   Q_D1492          FS_F2S1:Q_D1492        Drift      49.297  0.486   QUAD-d     +15.051    4.1833    21
27.   DH_D1513         FS_F2S1:DH_D1513       Dipole     50.462  2.392   +30.0 *     +9.158    4.1833*   4.
28.   Q_D1538          FS_F2S1:Q_D1538        Drift      53.930  0.400   QUAD-u      +8.582    4.1833    15
```

Optic settings (fast editing)

Block	Nick Name	Official Name	Start (m)	Length (m)	B0 (kG) * U	Br(Tm) cor * real	DriftM * Angle	R pole (cm) * Radius(m)	L eff (m) * L dip (m)	2nd order	Calc
Fit	Q2_sR		2.9	0							
drift	DL_2.950		2.9	0.05			standard		c_0.2765		
<Quad>	WIQ3	FS_F1S1:Q_D1035	2.95	1.05	+6.2309	4.4985	QUAD-d	13.0000	c_0.8201	yes	1
Fit	Q3_sR		4	0							
drift	DL_5.400		4	1.4			standard		c_1.5149		
** Dipole	FSD1_SCD1	FS_F1S1:DV_D1064	5.4	2.1676	+10.8665	* 4.4985	* +30.0	* 4.1398	* 2.1676	yes	* 0
drift	DL_8.970		7.568	1.476			standard				
slits	slit_IMG1		9.044	0			SLITS				
Fit	XTheta_D1064		9.044	0							
drift	DL_9.770		9.044	0.8			standard				
** Dipole	FSD1_SCD2	FS_F1S1:DV_D1108	9.844	2.1702	-10.8535	* 4.4985	* -30.0	* 4.1448	* 2.1702	yes	* 0
drift	DL_13.314		12.014	1.449			standard		c_1.4029		
<Quad>	WIQ4	FS_F1S1:Q_D1137	13.463	0.7	+8.5340	4.4985	QUAD-u	20.0000	c_0.7921	yes	1
Fit	Q4_sR		14.163	0							
drift	DL_14.402		14.163	0.3877			standard		c_0.2926		
<Quad>	WIQ5	FS_F1S1:Q_D1148	14.551	0.7	-10.2500	4.4985	QUAD-u	20.0000	c_0.7981	yes	1
Fit	Q5_sR		15.251	0							
drift	DL_16.689		15.251	1.5873			standard		c_1.4899		
<Quad>	WIQ7	FS_F1S1:Q_D1170	16.838	0.7	+5.5840	4.4985	QUAD-u	20.0000	c_0.7967	yes	1
Fit	Q6_sR		17.538	0							
drift	DL_18.082		17.538	0.6929			standard		c_0.6445		
drift	DL_18.345		18.231	0.2635			standard				
slits	slits_PS_WED		18.494	0			SLITS				
drift	DL_18.407		18.494	0.0615			standard				

"d" - downstream

"u" - downstream

Selected block | Dispersive (M-dipole) | Block Length [m] | Block Edit | Angular acceptance (mrad) | Use | Horizontal ± 60 | Inside Aperture (mm) | min | max | Use | X= -1 1 | Slits (mm) after BL | min | X=

eL_ARIS_v3

By Shane Watters

Spectrometer design

Block	Nickname	Official	Z-q	Length, m	Enable
** Dipole	dummy	dummy_preseparator	0	0	✓
Rotate	RAm90			0	✓
drift	DL_0.1020			0.102	✓
drift	Post-Target ...			0.4	✓
drift	DL_0.5335			0.032	✓
drift	Vac. Sep. Valve			0.093	✓
drift	DL_0.8873			0.261	✓
<Quad>	WIQ1	FS_F1S1:Q_D1013		0.826	✓
Fit	Q1_sR			0	✓
drift	DL_1.8000			0.087	✓
drift	Fnt. Shld. WIQ2			0.05	✓
<Quad>	WIQ2	FS_F1S1:Q_D1024		1.05	✓
Fit	Q2_sR			0	✓
drift	DL_2.9500			0.05	✓
<Quad>	WIQ3	FS_F1S1:Q_D1035		1.05	✓
Fit	Q3_sR			0	✓
drift	DL_4.1500			0.15	✓
drift	DL_4.7500	FS_F1S1:CLLM_D1045		0.6	✓
drift	DL_5.4000			0.65	✓
	Q1035			0	
	_SCD1	FS_F1S1:DV_D1064	0	2.094	✓
drift	DL_8.9704			1.476	✓
slits	slit_IMG1			0	✓
				0	✓
				0	
drift	Collimator/Shield	FS_F1S1:CLLM_D1092		0.4	✓
drift	DL_9.5576			0.4	✓
Dipole	FSD1_SCD2	FS_F1S1:DV_D1108	0	2.094	✓
rift	DL_12.1148			0.25	✓
drift	Space for 2nd BD	FS_SBD:BD_D1125		0.674	✓

eL_ARIS_v2_orig

All blocks according to ARIS lattice

292 blocks

Spectrometer design

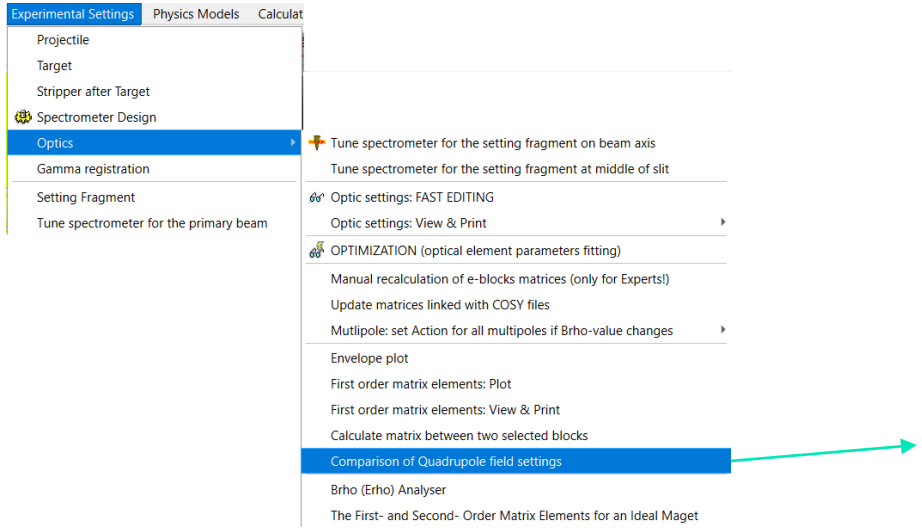
Block	Nickname	Official	Z-q	Length, m	Enable
Rotate	RAm90			0	✓
drift	DL_0.502			0.502	✓
slits	Post-target Shie...			0	✓
drift	DL_0.887			0.385	✓
<Quad>	WIQ1	FS_F1S1:Q_D1013		0.826	✓
Fit	Q1_sR			0	✓
drift	DL_1.850			0.137	✓
<Quad>	WIQ2	FS_F1S1:Q_D1024		1.05	✓
Fit	Q2_sR			0	✓
drift	DL_2.950			0.05	✓
<Quad>	WIQ3	FS_F1S1:Q_D1035		1.05	✓
Fit	Q3_sR			0	✓
drift	DL_5.400			1.4	✓
** Dipole	FSD1_SCD1	FS_F1S1:DV_D1064	0	2.168	✓
drift	DL_8.970			1.476	✓
slits	slit_IMG1			0	✓
Fit	XTheta_D1064			0	✓
drift	DL_9.770			0.8	✓
** Dipole	FSD1_SCD2	FS_F1S1:DV_D1108	0	2.17	✓
drift				1.449	✓
<Quad>				0.7	✓
Fit	Q4_sR			0	✓
drift	DL_14.402			0.388	✓
<Quad>					
Fit					
drift	DL_16.689			1.587	✓
<Quad>	WIQ7	FS_F1S1:Q_D1170		0.7	✓
Fit				0	✓
drift				0.693	✓
Material	PS_WED_PPAC0	FS_F1S1:POSD_D1181			

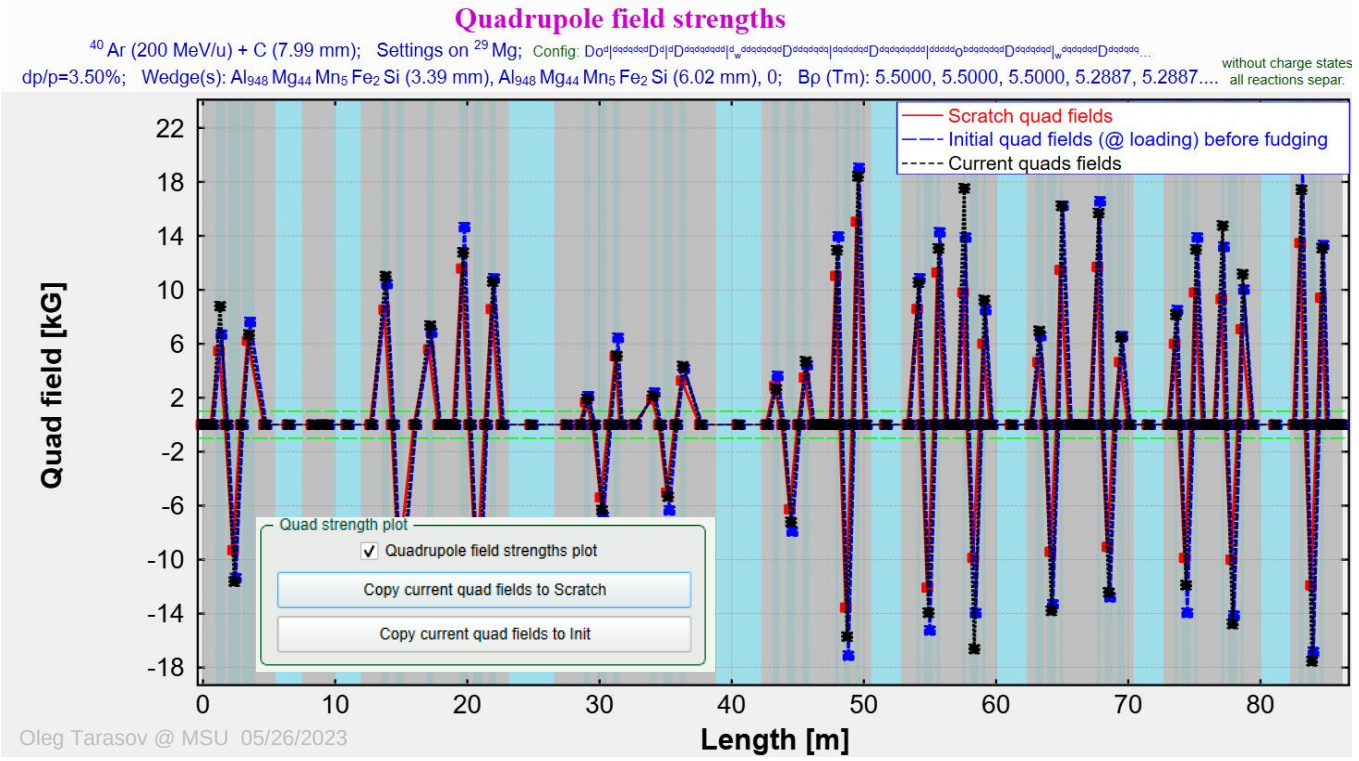
eL_ARIS_v3

Multiple drift blocks compressed

244 blocks

Comparison of Quadrupole field settings





Quad settings comparison

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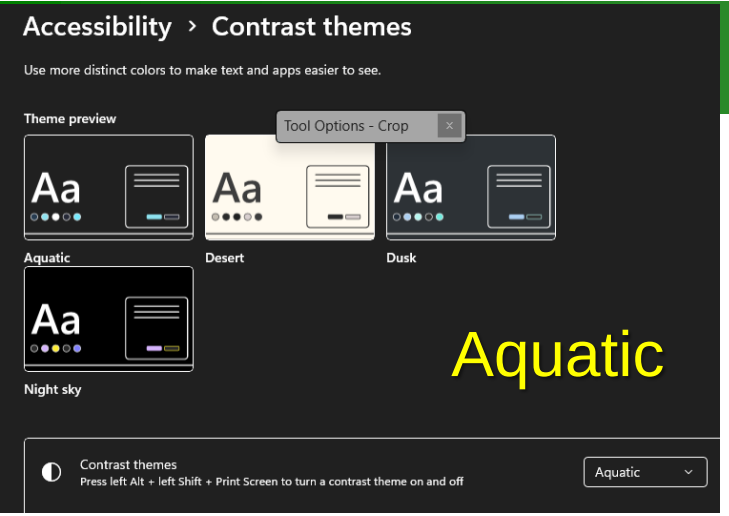
! FILE: C:/temp/eL_ARIS_v2_run1306read.lpp; Quad settings comparison

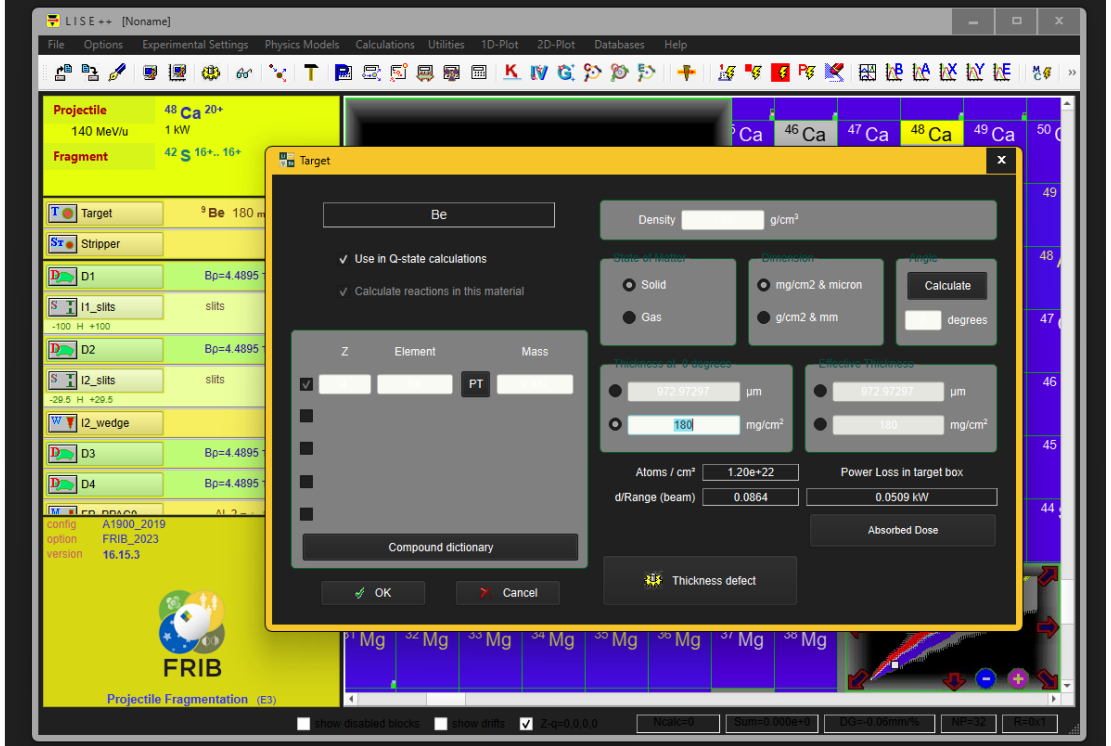
1 N	2 Block name	3 Official name	4 B-current	5 B(kG)-prev	6 B-scratch	7 curr/prev	8 curr/scrt	9 prev/scrt
1.	WIQ1	FS_F1S1:Q_D1013	+8.793	+6.686	+5.468	+24.0%	+37.8%	-22.3%
2.	WIQ2	FS_F1S1:Q_D1024	-11.638	-11.364	-9.295	+2.4%	+20.1%	-22.3%
3.	WIQ3	FS_F1S1:Q_D1035	+6.679	+7.618	+6.231	-14.1%	+6.7%	-22.3%
4.	WIQ4	FS_F1S1:Q_D1137	+11.013	+10.434	+8.534	+5.3%	+22.5%	-22.3%
5.	WIQ5	FS_F1S1:Q_D1148	-12.861	-12.532	-10.250	+2.6%	+20.3%	-22.3%
6.	WIQ7	FS_F1S1:Q_D1170	+7.353	+6.827	+5.584	+7.1%	+24.1%	-22.3%
7.	CIQT1A	FS_F1S2:Q_D1195	+12.769	+14.644	+11.583	-14.7%	+9.3%	-26.4%
8.	CIQT1B	FS_F1S2:Q_D1207	-13.825	-14.624	-11.568	-5.8%	+16.3%	-26.4%
9.	CIQT1C	FS_F1S2:Q_D1218	+10.609	+10.843	+8.577	-2.2%	+19.2%	-26.4%
10.	CIQT2A	FS_F1S2:Q_D1288	+1.920	+2.113	+1.672	-10.1%	+12.9%	-26.4%
11.	CIQT2B	FS_F1S2:Q_D1299	-6.330	-6.803	-5.381	-7.5%	+15.0%	-26.4%
12.	CIQT2C	FS_F1S2:Q_D1311	+5.107	+6.436	+5.090	-26.0%	+0.3%	-26.4%
13.	CIQT3A	FS_F1S2:Q_D1338	+2.139	+2.385	+1.887	-11.5%	+11.8%	-26.4%
14.	CIQT3B	FS_F1S2:Q_D1349	-5.337	-6.360	-5.030	-19.2%	+5.8%	-26.4%
15.	CIQT3C	FS_F1S2:Q_D1361	+4.343	+4.146	+3.279	+4.5%	+24.5%	-26.4%
16.	CIQT4A	FS_F1S2:Q_D1430	+2.645	+3.614	+2.859	-36.7%	-8.1%	-26.4%
17.	CIQT4B	FS_F1S2:Q_D1441	-7.217	-7.919	-6.264	-9.7%	+13.2%	-26.4%
18.	CIQT4C	FS_F1S2:Q_D1453	+4.695	+4.424	+3.499	+5.8%	+25.5%	-26.4%
19.	Q_D1476	FS_F2S1:Q_D1476	+12.934	+13.953	+11.037	-7.9%	+14.7%	-26.4%
20.	Q_D1484	FS_F2S1:Q_D1484	-15.709	-17.126	-13.546	-9.0%	+13.8%	-26.4%
21.	Q_D1492	FS_F2S1:Q_D1492	+18.403	+19.028	+15.051	-3.4%	+18.2%	-26.4%
22.	Q_D1538	FS_F2S1:Q_D1538	+10.533	+10.849	+8.582	-3.0%	+18.5%	-26.4%
23.	Q_D1545	FS_F2S1:Q_D1545	-13.943	-15.260	-12.070	-9.4%	+13.4%	-26.4%
24.	Q_D1553	FS_F2S1:Q_D1553	+13.068	+14.263	+11.281	-9.1%	+13.7%	-26.4%
25.	Q_D1573	FS_F2S2:Q_D1573	+17.527	+13.882	+9.813	+20.8%	+44.0%	-41.5%
26.	Q_D1580	FS_F2S2:Q_D1580	-16.632	-13.960	-9.868	+16.1%	+40.7%	-41.5%
27.	Q_D1588	FS_F2S2:Q_D1588	+9.243	+8.498	+6.008	+8.1%	+35.0%	-41.5%
28.	Q_D1629	FS_F2S2:Q_D1629	+6.958	+6.574	+4.647	+5.5%	+33.2%	-41.5%
29.	Q_D1639	FS_F2S2:Q_D1639	-13.800	-13.313	-9.411	+3.5%	+31.8%	-41.5%
30.	Q_D1646	FS_F2S2:Q_D1646	+16.214	+16.237	+11.478	-0.1%	+29.2%	-41.5%
31.	Q_D1674	FS_F3S1:Q_D1674	+15.693	+16.562	+11.707	-5.5%	+25.4%	-41.5%
32.	Q_D1682	FS_F3S1:Q_D1682	-12.441	-12.800	-9.048	-2.9%	+27.3%	-41.5%
33.	Q_D1691	FS_F3S1:Q_D1691	+6.474	+6.574	+4.647	-1.5%	+28.2%	-41.5%
34.	Q_D1733	FS_F3S1:Q_D1733	+8.139	+8.498	+6.008	-4.4%	+26.2%	-41.5%
35.	Q_D1740	FS_F3S1:Q_D1740	-11.899	-13.960	-9.868	-17.3%	+17.1%	-41.5%
36.	Q_D1748	FS_F3S1:Q_D1748	+12.990	+13.882	+9.813	-6.9%	+24.5%	-41.5%
37.	Q_D1767	FS_F3S2:Q_D1767	+14.757	+13.182	+9.318	+10.7%	+36.9%	-41.5%
38.	Q_D1775	FS_F3S2:Q_D1775	-14.780	-14.137	-9.993	+4.4%	+32.4%	-41.5%
39.	Q_D1783	FS_F3S2:Q_D1783	+11.162	+10.022	+7.085	+10.2%	+36.5%	-41.5%
40.	Q_D1827	FS_F3S2:Q_D1827	+17.421	+19.048	+13.465	-9.3%	+22.7%	-41.5%
41.	Q_D1835	FS_F3S2:Q_D1835	-17.544	-16.838	-11.902	+4.0%	+32.2%	-41.5%
42.	Q_D1843	FS_F3S2:Q_D1843	+13.084	+13.320	+9.415	-1.8%	+28.0%	-41.5%

New LISE palette

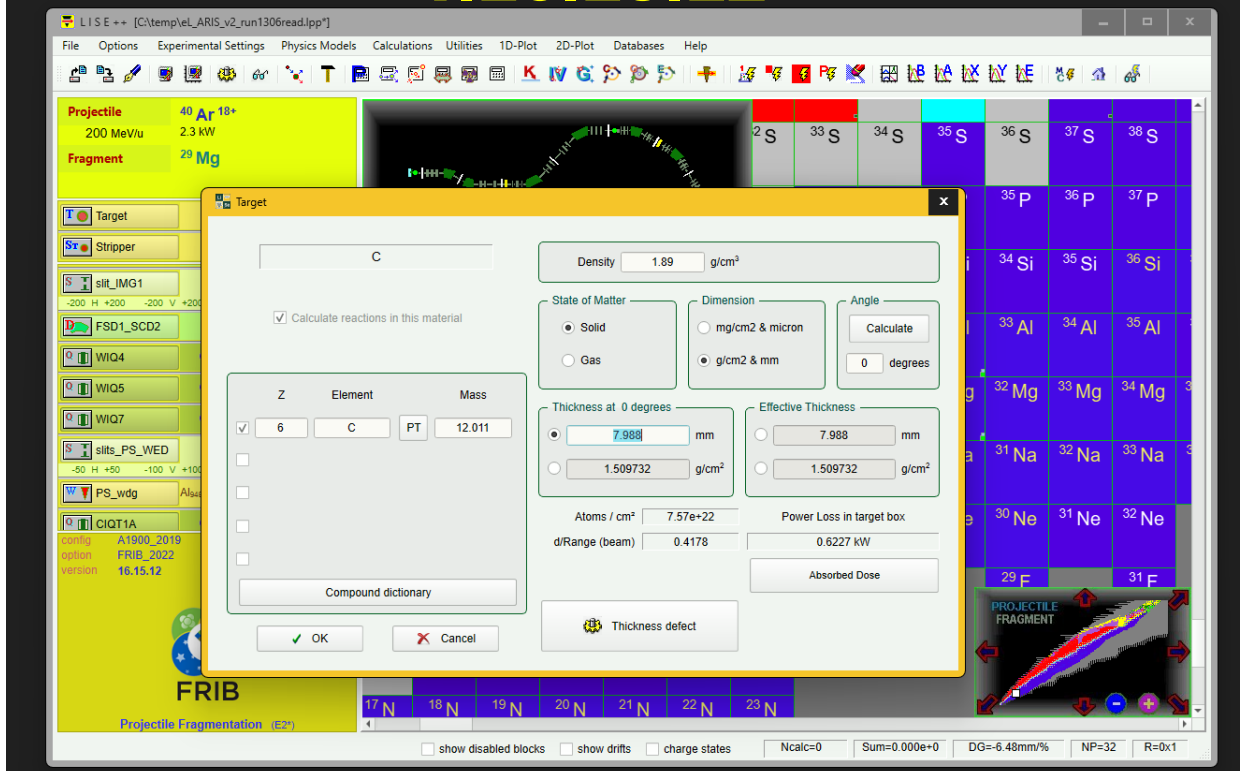
By Daniel Kaloyanov



v.16.15.3



v.16.15.12



Short descriptions of Versions 16.14.30 – 16.15.12

// 16.14.30 05/14/23
// Options to load dipole values with ARIS saveset reading

// 16.14.31 05/14/23
// Dipole calibration: if nCols==4, then col[2] (Brho) = col[1](B) * col[3](R)

// 16.14.32 05/14/23
// Quadrupole field strength plot : shifts were increased to 0.1

// 16.14.33 05/15/23
// PACE4 update

// 16.14.34 05/15/23
// correction: writing to root format spectra
// ROOT -- 3 columns format

// 16.14.35 05/15/23
// Udpate of d_Options dialog layout

// 16.14.36 05/15/23
// Fixed: bug with database structure arrow button.

// 16.14.37 05/16/23
// Modification of BI-headers (BI-code)

// 16.14.38 05/17/23
// Write spectrum ROOT files

// 16.14.39 05/17/23
// skip drift info to write in file in the case of non-quad

// 16.14.40 05/17/23
// skip zero row in writing 2nd order matrix

// 16.14.41 05/17/23
// Drift class: new parameter linkTo

// 16.14.42 05/17/23
// Modification of c_config and d_Multipole for drift::linkTo

// 16.14.43 05/17/23
// Modification of d_SetupOptics and Mainwindow_optics to show quad links

// 16.14.44 05/18/23
// Modification in Global code (MH's request)

// 16.14.45 05/18/23
// New ARIS eFiles: eL_ARIS_v2 and eL_ARIS_v2_orig

// 16.14.46 05/18/23
// correction in d_Multipoles with initializaton

// 16.15.1 05/18/23
// Middle version has been changed

// 16.15.2 05/18/23
// Update of p_Block_Drift for linked Brho

// 16.15.3 05/19/23
// eL_ARIS_v3 : corrections for C-Bend dipole maps

// 16.15.4 05/22/23
// Comparison_of_Quadrupole_field_settings

// 16.15.5 05/22/23
// SpeedBall timer start and stop functions after Sasha T. performance analysis

// 16.15.6 05/24/23
// renames B0_prev --> B0_scratch

// 16.15.7,8 05/25/23
// Completed: Comparison_of_Quadrupole_field_settings

// 16.15.9-11 05/26/23
// Modified : New LISE code palette -- DAK, then OT

// 16.15.12 05/26/23
// eL_ARIS_v3.lpp modified (see notes in file)