



## Update v.9.10.119 from 06/23/15

Please find the first part of Optics minimization v.9.10.100 : http://lise.nscl.msu.edu/9\_10/9\_10\_minimization.pdf

- 1. Fitting constraint block : new option "Active"
- 2. Change the Fitting option "Active" in the "Fast Edit Optics" dialog
- 3. New Option in the Preferences dialog: show "Fit" blocks in the Scheme and Setup windows
- 4. Appearance of Fitting constraint blocks in Menus, Dialog, Windows
- 5. Call the "Fast Edit Optics" dialog from the Optics optimization dialog
- 6. User Break in the Minimization process
- 7. Miscellaneous for fitting procedure
- 8. Miscellaneous for v.9.10.119





### **New option**

Fit 1		<b>X</b>
This constraint is ACTIVE [will be used in the minimization process]	Global Block matrix	Beam (sigmas)
Desired parameters of element to fit		C 59.0866 [mm]
Constraint : Equal to 👻	2. T C -1.0593 C 0.4252 C 0 C 0 C 0 C 0.1935	C 4.3866 [mrad]
		C 1.052 [mm]
Desired Value = 0	4. F C O C O C 6.3831 C 1.2182 C O C O	C 13.7534 [mrad]
Desired Accuracy = 0.001	5. L C 6.2085 C -2.5106 C O C O C 1 C -5.455	C 26.4312 [mm]
Constraint name = Fit 1		0 1 [%]
	/[mm] /[mrad] /[mm] /[mrad] /[mm] /[%]	Dimension
TRANSPORT notation	Det = 1.00007	Dimension
10.0 -1. 2. 0 0.001 "Fit 1"		mm • Ocm
Typical TRANSPORT constraints	✓ OK X Cancel ? Help	

- If it is not "active", then the block will still enable in the Setup and FastEditOptics dialogs, but it won't be shown in The Scheme and Setup windows
- This property it can be easily changed from the "Fast Edit Optics" dialog (see the next slide)



# **Change the Fitting option "Active" in the "Fast Edit Optics" dialog**

MICHIGAN STATE UNIVERSITY LISE++

Application for Fitting constraint blocks

Optics setting	gs (fast editing	)	1-									-	×
Block	Given Name	Start(m)	Length(m	I BO(kG)	Br(Tm)cor/*real	DriftM/*Angle	Rapp(cm)/*R(	Leff(m)/*Ldip(m)	2 nd order	CalcMatr/*Z-Q	AngAcc,Apps,Slits	COSY   Fit	SE 🔺
F 🗶 Fit	Fit 7	16.385	0.0000									s1 < 150	е
F 🔭 Fit	Fit 8	16.385	0.0000									s3 < 150	е
d 🔲 drift	DR37	16.385	0.1584			standard							е
🔍 🔷 <quad></quad>	SC_Q36	16.543	0.3782	+4.2659	1.0000	MULT	15.0000	0.3782	yes	1 B	- HV	FIT	е
F 🔭 Fit	Fit 9	16.921	0.0000									s1 < 150	е
F 🗶 Fit	Fit 10	16.921	0.0000									s3 < 150	е
d 🔲 drift	DR38	16.921	0.6854			standard							е
E =ElecDip	ElecDip 1	17.607	1.5359	0.0kV	1.0051	* -22.0	* 4.0000	* 1.5359	yes	*1 R	H		E
d 🔲 drift	DR41	19.143	0.6853			standard							е
Quad>	SC_Q41	19.828	0.3782	+3.0592	1.0051	MULT	15.0000	0.3782	yes	1 R	- HV	FIT	e
F 🔭 Fit	Fit 11	20.206	0.0000									s1 < 150	е
F 🔭 Fit	Fit 12	20.206	0.0000									s3 < 150	е _
d 🔲 drift	DR42	20.206	0.1584			standard							e =
🝳 🔷 <quad></quad>	SC_Q42	20.365	0.3782	-6.2604	1.0051	MULT	15.0000	0.3782	yes	1 R	- HV	FIT	е
F 🔭 Fit	Fit 13	20.743	0.0000									s1 < 150	e
F 🔭 Fit	Fit 14	20.743	0.0000									s3 < 150	е
d 🔲 drift	DR43	20.743	0.1584			standard						•	е
🝳 🔷 <quad></quad>	SC_Q43	20.901	0.3782	+4.6019	1.0051	MULT	15.0000	0.3782	yes	1 R	- HV	FIT	е
d 🗖 drift	DR44	21.279	0.5694			standard							е
F 🔭 Fit	foc3 x	21.849	0.0000									R12 = 0	е
F 🗶 Fit	focy 3	21.849	0.0000									// R34=0	no
S I _slits_	F3	21.849	0.0000			SLITS						•	е
d 🗖 drift	DR45	21.849	0.6894			standard						÷	е 👻
Selected block						Angular accept	ance (mrad)	Inside Aperture (mm	)	Slits (mm) after thi	s BLOCK	st order Matrix	Elements
Fitting	constraints	Ler	ijočk igth [m]	Selecte	d Block Edit		Use	min r	nax Use	min	max Use	Matrix	Plot
Block name			0	SER Mut	i <del>pele E</del> dit	Horizontal ±		X=  -50   !		×=		A Beam-Sign	ma Plot
Auto fo	юу З			-		Vertical ±		Y= -50 5	50 🗆	Y =			
		this b	ntratter lock [m] _	● <u>1</u> Cuts (Ad	cceptances)	Shape		Shape		Shape		nd Viev	v
Use in the FI	I process	21.	8487	6a' Optic	cal Matrix	Rectangle C	Ellipse	Rectangle C 🔎	Ellipse	Rectangle 📀	C Ellipse		
												Quit	Help

	DH44	21.279	0.5634		standard			- е
F 🏌 Fit	foc3 x	21.849	0.0000					R12=0 e
F 🗶 Fit	focy 3	21.849	0.0000					R34=0 e
S I _slits_	F3	21.849	0.0000		SLITS			- е
d 🗖 drift	DR45	21.849	0.6894		standard			· e <del>,</del>
Selected block - Fitting Block name Auto matic. fo Use in the FI1	constraints icy 3 F process 🔽	Ler Ler Len thist	Block ngth [m] 0 gth after 5lock [m] .8487	Selected Block Edit       Muttipole Edit       Image: Cuts (Acceptances)       Optical Matrix	Angular acceptance (mrad) Horizental ± Vertical ± Shape Rectangle C © Ellipse	Inside ∆pertaire (mm)           min         max         Use           X =         -50         50         □           Y =         -50         50         □           Shape	Slits (mm) after this BLOCK min max Use X = Y = Shape Rectangle ( C Ellipse	Ast order Matrix Elements     Matrix Plot     Beam-Sigma Plot     Ga <sup>4</sup> View     Quit     Help





#### Application for <u>M & E quadrupoles</u> blocks

F     Fit     Fit 14       d     drift     DR43       Q     Quady     SC_Q43       d     drift     DR44       F     Fit     foc3 x	20.743         0.0000           20.743         0.1584           20.901         0.3782           21.279         0.5694           21.849         0.0000	+4.6019 1.0051	standard MULT 15.0000 standard	0.3782 yes	  1R HV 	s3 < 150 e → FIT e R12=0 e →
Selected block Drift (multipole,slits) Block name Auto matic. SC_Q43 Use in the FIT process	Block Length [m] 0.3782 Length after this block [m] 21.2793 e	Selected Block Edit Mutlipele Edit Cuts (Acceptances) Go <sup>*</sup> Optical Matrix	Angular acceptance (mrad)	Institute Aperture (mm)           min         max         Use           X =         -150         150         IV           Y =         -150         150         IV           Shape         Rectangle ∩ • Ellipse         • Ellipse	Slits (mm) after this BLOCK min max Use X = Y = Shape Rectangle ( CEllipse	1-st order Matrix Elements       Matrix Plot       Beam-Sigma Plot       Ød <sup>4</sup> View

F ★         Fit           d □         drift           Q ◇ <quad>           d □         drift           F ★         Fit</quad>	Fit 14 DR43 SC_Q43 DR44 foc3 x	20.743         0.0000           20.743         0.1584           20.901         0.3782           21.279         0.5694           21.849         0.0000	+4.601	9 1.0051	standard MULT standard	15.0000	0.3782	yes	1 R	 HV	s3 < 150		
Selected block - Drift (m Block name Auto Matic. St Use in the FIT	ultipole,slits) C_Q43 T process	Block Length [m] 0.3782 Length-after this block [m] 21.2793	<ul> <li>♣ Sele</li> <li>♠ M</li> <li>● ☐ Cuts</li> <li>66<sup>4</sup></li> </ul>	cted Block Edit Iutlipole Edit (Acceptances) ptical Matrix	Angular acceptance	(mrad) Use Ellipse	Inside Aperiture (mm)         min         max           x =         -150         150           Y =         -150         150           Shape         Rectangle C         (•)	ax Use 0 V 0 V Ellipse	Slits (mm) after the min X = Y = Shape Rectangle •	his BLOCK max Use	- 1-st order Mat	ix Elements ix Plot igma Plot iew	



# New Option in the Preferences dialog: show "Fit" blocks in the Scheme and Setup windows



Preferences Preferences			
- Starting files and working directories	- Options dialogs		
Starting configuration at loading the program A1900_2015.lcn	rowse Target optimization options		
Starting options file at loading the program A1900_2015.lopt	rowse Scheme entire		
Working directory			
Current user has Administrative privilegies: Yes LISE++ working directory Coser (My Docum (options, config, etc) is Coser (My Docum (options, config, etc) is Coser (My Docum	etory Plot options		
Calculation settings			
Calculation threshold = 1.0e-10 pps maximal • C mean	Apply the "Edge" effect in distribution cuts		
Preferences         Strating files and working directories:         Stating configuration at loading the program       A1900_2015.6pt         Working directory:       Calculation strates in the strate in the strate in the strates in the strate in the strates in the strate in the stra			
Preferences         Stating files and working directories         Stating configuration at loading the program       A1500_2015 lopt         Working directory       Current user has         Working directory       Current user has         Calculation settings       (LISE++ working directory)         Calculation settings       (LISE++ working directory)         Dimension of distribution (NP)       recommended         Calculation with He 3D = 20       20         Object the states       (Configuration at loading the program)         Calculation with He 3D = 20       20         wedge calculation WITHOUT       (End peak)         Charge states       (Configurational)         Calculation with He 3D = 20       20         wedge calculation WITHOUT       (End peak)         Charge states       (Configurational)         Calculation with He 3D = 20       20         wedge calculation WITHOUT       (End peak)         Charge states       (Configurational)         Calculation with He 3D = 20       20         wedge calculation 3D = 16       (Configurational)         Diapley 1       Cold All reactions (proj )       (Configurational)         Conserverting       (Configurational)       (Configurational)			
efferences         Starting files and working directories:         Starting options file blocking the program         A1900_2015.kpt         Working directory         Calculation at loading the program         A1900_2015.kpt         Browse         Working directory         Calculation settings         Calculation settings         Calculation settings         Calculation with 12 U = 10 memory         Object the setting of the settings         Calculation with 12 U = 10 memory         Object the settings         Calculation with 12 U = 10 memory         Calculation 12 = 16         Display 1         Total A1 memory         Display 2         Total in memory         V = 10 memory         V = 10 memory         <			
wedge calculation 32   16 No   Yes	Fit O 📀 File 🥵 CS File Settings		
Transmission information in the Table of Nuclides         Display 1       Total: All reactions (pps)         Display 2       Total ion transmission (%)	Debug & expert options Show transmission calculation time Charge State Optimization Debugging Mode Distribution Debugging Mode (file 'distrib.txt')		
	Check LIZ-file consistency (Conligurations)		
✓ OK     X Cancel     Y Help     ✓ Show Fitting constraint blocks in the Setup and Scheme windows	Hold angles of an inclination of a target and a stripper together		
Preferences         Stating configuration at loading the program       A1900_2015 lost               Bowsee           Volking directory        Consections file at loading the program       A1900_2015 lost              Bowsee               Scheme options          Volking directory        Consections file at loading the program       A1900_2015 lost              Bowsee               Scheme options          Volking directory        Consections        User VMy Documents               Bowsee               Scheme options               Betwee          Calculation settings        Calculation settings               Calculation settings               Plant provide               Plant prov			



# **Appearance of Fitting constraint blocks in Menus, Dialog, Windows**



Window	Show
Setup window	only Active*
Setup scheme	only Active*
Setup dialog ("Spectrometer design")	always
Optics settings dialog (fast editing)	always
Menus	never
Monte Carlo calculation of fragment transmission	never
* - show only "Active", if the option is set the "Prefere	e corresponding ences"diaolg

### Setup scheme



### Setup dialog ("Spectrometer design")

## Setup window

P roj	<mark>ectile 4</mark> 74 MeV/u 1	0 <mark>Ar<sup>16+</sup></mark>	
Frag	gment 4	<sup>0</sup> Ar <sup>17+17+</sup> =bea	im=
T 🔴	Target	<sup>9</sup> Be 10 m cron	
St 😐	Stripper		
D_	tuning	Brho 1.0000 Tm	
d 🗆	DR11	standard 62.4 cm	
<mark>0</mark> 🔷	SC_Q11	QUAD 4.05 kG	
d 🗆	DR12	standard 15.84 cm	
<mark>0</mark> 🔷	SC_Q12	MULT -8.3445 kG	
d 🗆	DR_13	standard 15.84 cm	
<mark>0</mark> 🔷	SC_Q13	MULT 4.05 kG	
d 🔳	DR14	standard 55.33 cm	
D	D11	Brho 1.0000 Tm	
s ∏	FH21	slits	
d 🗆	DR21	standard 95.06 cm	
<mark>0 🔷</mark>	NSC_Q21	MULT 1.9818 kG	
d 🗆	DR22	standard 14.12 cm	
<mark>0</mark> 🔷	NCS_Q22	MULT -3.9414 kG	
d 🗆	DR23	standard 14.12 cm	
<mark>0</mark> ♦	NCS_Q23	MULT 2.5505 kG	
d 🗆	DR24	standard 74.06 cm	
S∏	F1	slits	

standare 91.43 cr

MULT 3.612 kC

standar 15.84 c

MULT

d 🗆

DR25

Block.		Given Name	Z-Q	Length,m	Enable	*	- Insert Mode	Inset block	
0	Quado	Q041-3TB		0.812			( before	- Materiala	
	bilt .	:042		0.135	+				
• •	Qued	Q043-3TC		0.43			Cotter	Wedge	T Target
	iit -	:044		0.563	+			N. Barristonana	See Common Toront
-	Dipole	02	0	2.43			Move element	Material (Detector)	Subber arter Lager
	hitt:	2052		0.552	*			Faraday cup	
• • •	Qued	Q053-4TA		0.43	+		11 00		
	iit -	:054		0.17			L Down		
• • •	Qued>	Q055-4TB		0.732	+	ш.	لسف	- Optical	
	bitt:	:056		0.176					
•	Quado	Q057-4TC		0.526	+		(B) Edt	dispersive	non-dispersive
	ыR.	:058		0.659	+			L'	
1	sits_	Image2(059)		0	+		X Delete	Dispersive (M-dipole)	d Drift (multipole,sits)
•	Vedge	Wedge			+			Wen velocity filter	R Bean Rotation
	iit:	:060		0.658			1 OK		
•	Qued	Q062-5TA		0.526	+		✓ 0	E Bectrostatic dipole	H↔ Shift of Optical Axis
	iit -	:063		0.176			? Help	Gas-filed separator	Solecoid
2 <b>Q</b> <	Qued	Q064-5TB		0.732	+				
	iir	:065		0.17		٣		Compensating Dipole	
Select	ed block -					-1	Total		
Enab	le 🔽		Dispersive	[M-dipole]	_	1	Number of	denarrius Elf-based	special (no beam dinamics changes)
		_			0.0001	11	DIOCAS	1	1
Let ca	il automati	aly 🗆	BRICKL	engin (m)	0.0001		82	K = BE monstor	Z Delay (efficience) block
Block.	name = tu	ning	Le this	block [n]	0		Length [n]		Contraction of the second
Charg	State (Z-I	a) = 0	Sequenc	e number 🗌	3		35.821	B RF buncher	F Fitting constraints
						_			

#### Menus

10.01		
10-Plot 20-Plot Databases Help	_	Target
Block selection distributions	•	Stripper
Angular distributions	+	tuning
Horizontal (X) space distributions	•	DR11
Vertical (Y) space distributions	+	SC_Q11
Momentum distributions	•	DR12
Energy distribution	•	SC_Q12
Total Kinetic Energy distributions	+	DR_13
Electrostatic rigidity distributions	-	SC_Q13
Beam and Setting fragment charge state distributions	+	DR14
Debug distributions		D11
Debug information		FH21
Price calection plat		DR21
Wedge selection plot		NSC_Q21
wedge selection plot		DR22
Isomeric Gamma spectrum	'	NCS_Q22
Transmission characteristics		DR23
Range distributions		NCS_Q23
Charge distributions		DR24
Average Ionic charge plot		F1
Cross Section distributions		DR25
Systematic distributions (O-g, O-gg, dBE, dBEsn)	•	SC_Q24
Velocity after reaction		DR26
,		

#### Monte Carlo calculation of fragment transmission

What include the One tragmont	namission to calculate? of interest. Chose manually here	After BLDDK	V-coordinate Aher BLOCK	Gate 1
<ul> <li>Excup of tool: by the Distribu- Last of isotope to produce in: Input ions ray emitted from t</li> </ul>	she akady calculated (Noak: = 0) shan téhod shan téhod ning téhod = no šie = aget statu téhod = no šie =	C X mm C X' (T) mad C Y mn C Y' (P) mad C dP/P X C Redol (I(CY) mn	× mm     ×' (T) mrad     Y' mrad     Y' p mrad     dP/P %     Rodel [(0\/)] mra	Gate 2
A Dene 4 Dene 4 Dene 40 Au 40 Au	nr Z 13 13 13 13 13 13 13 13 13 13	Angle (5:11) med     Innegy MeV/s     The MeV/s     Morrentan MeV/s     Bin Th     Engl List MeV     Manachas MeV/c     Bing List MeV     Range mn     Ennegt List MeV     Range mn     Ennegt List MeV	Angle (6/1/1) med Energy MeV/o TKE MaV Monsentan MeV/o Brosentan MeV/o Brosentan MeV/o Broge me Energy MeV Energy MeV Energy MeV/on Depositon Systems	Gan 3 Can de
add in the	MC transmission options	Tane of tight nt Length n Stripper v (< S	Time of light ins Clength m Salt is Streper v Nop is v	Gain 4
previous MC plot window	HC calculation to file	Velocity Velocity_Z (cnVnt) + Ion parameters (M.Z.q., )	Velocity Velocity (cn/Hz) + Ion parameters (M.Z.g. )	

## **Optics settings (fast editing)**

Block	Given Nane	Statio	Length()	3 80kG)	Br[Trajcov/teal	Diast/Strate	Rappices/PR(.	Lettri/Ldpin)	2 nd oxdex	CokMot/2-0	Angloc.Apps.Sills	
Ratio - Doole	6.ming	0.000	0.0001	+3.3333	*1.0000	- +0.0	, 3'0000	* 0.0001		-1		
4 🖬 dill	DRI11	0.000	0.6243			utandoid					- HV -	
0.00 O	SC_011	0.634	0.3782	=4.0500	1.0000	QUAD	15:0000	0.3782	340	18	- HV -	
fi 🖬 🖬 🖥	DR12	1.002	0.1584			standard						
🖲 🔕 (Quad)	\$C_Q12	1.161	0.3782	-0.3445	1.0000	MULT	15:0000	0.3782	741	18	- HV -	
dit 🖬	DR_13	1.539	0.1584			standard						
20 alund	SC_Q13	1.897	0.3782	+4.0500	1.0000	MULT	15:0000	0.3782	342	18	- HV -	
📲 🖬 dati	D(F(14)	2.075	0.5533			standard						
Page - Dipole	D11	2.629	0.9533	~4.0000	-1.0000	- +22.0	* 2.5000	* 0.9599	340	*18	- 4 -	
S (R).	FH21	3.573	0.0003			SUITS					H-	
4 D dit	DR21	3.599	0.9506			ulanded						
Queo Cueo	NSC_021	4.539	0.6739	+1,9818	1.0000	MULT	15,0000	0.6198	340	18	- HV -	
din 🖬	DRI22	5.193	0.1412			utandard						
20 Queb	NCS_022	5.300	0.6198	-3.9414	1.0000	MULT	15:0000	0.6198	340	18	- HV -	
d 🗖 dit	DR23	5.930	0.1412			standard						
20 Quad	NC5_023	6:051	0.6198	×2.5505	1.0000	MULT	15:0000	0.6190	340	18	- HV -	
din 🖬	DR24	6.691	0.7406			standard					H-	
5 . m.	F1	7.422	0.0000			SLITS						
4 🖬 dil	DR25	7.422	0.9143			standard						
20 Queb	SC_Q24	8.336	0.3782	+3.6120	1.0000	MULT	15:0000	0.3782	342	18	- HV -	
fite 💶	DR26	8.714	0.1584			standard						
CQuad-	\$0,,025	8.873	0.3782	4.5300	1.0000	MULT	15.0000	0.3782	341	18	- HV -	
4 🛙 an	DR27	9.251	0.1584			standard						
- Selected block						- Angular accepts	rce (wad-	- Inside Aperture Inwil		Sits lowed after th	estock	-croler Nati
Disper	tive [M-dipole]		Elock.	(B) Selecte	d Block Edt		Use	nin n	as Use	nin	Nai Use	Net Net
Block name		- 6	1 000075	191 11-1		Holpontal ±	- F	X= -50 5		X		
- Auto	uning			00 100	CON CON	Vetical #	- F	Y= -50 5	0 1	Y =	I	D Bear-o
realic.		Le	righ alter	📲 Cuts (A	coeptances)	Shice		Shape		Suce		fo" 14
		. Ë	D.CEER Lag	44 040		Dectarch C	G Dros	Bartarda C. G.	C Brue	Dectanda (2	C Eliza	
Over pe Stat	+(Z-Q)= 1		0.0001	60 Opti	anan.	record de .	Cabot					/ 0.4





#### Optics fit

Blocks with parameters to vary	Active Constraint blocks							
#01         Position@030:         SC_Q31           #02         Position@032:         SC_Q32           #03         Position@034:         SC_Q33           #04         Position@042:         SC_Q34           #05         Position@044:         SC_Q35           #06         Position@048:         SC_Q36           #07         Position@058:         SC_Q41           #08         Position@058:         SC_Q42           #09         Position@062:         SC_Q43           #10         Position@068:         SC_Q44           #11         Position@072:         SC_Q45           #12         Position@076:         SC_Q45           #13         Position@076:         SC_Q51           #14         Position@086:         SC_Q52           #15         Position@090:         SC_Q53	#01       @038:       R16 = 0       disp2         #02       @039:       R12 = 0       foc2 x         #03       @040:       R34 = 0       foc2 y         #04       @045:       s1 < 150							
N iter = 30								
Fiestorie previuos values	(fast editting)							
Matrix Plot								
× Exit	📐 🛛 Beam-Sigma Plot							
Help     eS3_dispersive v4_5.fit								

llack	Giuen Name	Statim	[ ] anoth(m)	ROLGI	RdTmlcor/meal	Didth / diodle	Bapp(cm)/*B(	Lattim [2] dialog	2 nd reday	CalcMatr/72.0	Analice Anna SBs	COSVIE	32
- Dipole	tuning	0.000	0.0001	+3.3333	1.0000	* +0.0	* 3.0000	* 0.0001		*1			E
D diit	DB11	0.000	0.6240			standard					– HV –		
deuD> 🔷	SC_Q11	0.624	0.3782	+4.0500	1.0000	QUAD	15.0000	0.3782	yes	18	– HV –		
🗖 deilt	DR12	1.002	0.1584			standard							e
deuD> 🔷	SC_Q12	1.161	0.3782	-8.3445	1.0000	MULT	15.0000	0.3782	yes	1 R	– HV –		
diit	DR_13	1.539	0.1584			standard							e
🔷 (Quad)	SC_Q13	1.697	0.3782	+4.0500	1.0000	MULT	15.0000	0.3782	yes	1 R	– HV –		
🗖 drift	DR14	2.075	0.5533			standard							e
💻 = Dipole	D11	2.629	0.9599	+4.0000	*1.0000	* +22.0	* 2.5000	* 0.9599	yes	*1 R			Ε
_sits_	FH21	3.589	0.0000			SLITS					H-		e
🔲 diit	DR21	3.589	0.9506			standard							
deuß> 🔷	NSC_Q21	4.539	0.6198	+1.9818	1.0000	MULT	15.0000	0.6198	yes	1 B	– HV –		e
🗖 diit	DR22	5.159	0.1412			standard							e
deuß> ◊	NCS_Q22	5.300	0.6198	-3.9414	1.0000	MULT	15.0000	0.6198	yes	18	– HV –		e
🖬 diit	DR23	5.920	0.1412			standard							e
deuD> 🔷	NCS_Q23	6.061	0.6198	+2.5505	1.0000	MULT	15.0000	0.6198	yes	1 R	– HV –		
🖬 diit	DR24	6.681	0.7406			standard					H-		e
_sits_	F1	7.422	0.0000			SLITS							
drift	DR25	7.422	0.9143			standard							e
<quad></quad>	SC_024	0.336	0.3782	+3.6120	1.0000	MULT	15.0000	0.3782	yes	1 B	– HV –		e
deit	DR26	8.714	0.1584			standard							۰
<quad></quad>	SC_Q25	8.873	0.3782	-6.5988	1.0000	MULT	15.0000	0.3782	yes	1 R	– HV –		e
🗖 diit	DR27	9.251	0.1584			standard							
selected block						Angular accepts	ance (mrad)	Inside Aperture (mm)		Sits (mm) after thi	BLOCK 1-1-	st order Matri	ix Elemer
Dispera	ive (M-dipole)		Block	(B) Selecter	d Block Edit		Use	min n	Nax Use	min	max Use	Matri	x Plot
Block name			00005	(f)) 11-0	ada Esta	Horizontal ±	- F	X= -50 5	0 -	X = [			
Auto h	uning				pole Lat	Vertical ±	- c	Y = -50 5		Y =	— - I <u>I</u>	L Beam-Si	gma Plot
matc.		Le	ngth after block (m)	🛃 🛛 Cute (Ac	ceptances)	Shape		Shape		Shape		6° W	ew
			00001	4.0 Ontio	al Matrix	Bectande C	@ Eline	Bectangle C @	Elinse	Bectangle (*	C Eline		_
Charge State	(Z·Q) = 1		20001	oro Opec	al maux.			riconarigito 1	- mpro	The second gives the		Que	2 Hr

Without leaving the "Optics fit" dialog it is possible to load the Fast Optics Edit" dialog where you can set/unset "Active" properties, modify Fitting constraint block parameters, or enter a Quad field value.









 New functions BLOCKnext and BLOCKprevious with "noFit" options

v.9.10.100

 Corrections for Separator scheme in the case of Fitting block

"SetFocus" back in the Fast Edit
 Optics dialog

Minimization output modification

11: SC_045 12: SC_046 13: SC_051 11: SC_052 15: SC_053	-1.08+01 < +0.08+00 < +0.08+00 < -1.08+01 < +0.08+00 <	-6.0600+00 +3.2960+00 +2.5170+00 -5.9050+00 +3.2020+00	<pre> +0.0e+00  +1.0e+01  +1.0e+01  +1.0e+01  +0.0e+00  +1.0e+01</pre>		
Fitting values: t01: disp2 t02: foc2 x t03: foc2 y t04: Fit 7 t05: Fit 8 t06: Fit 9 t07: Fit 10 t08: Fit 11 t09: Fit 12 t10: Fit 13 t11: Fit 14 2: foc3 x t15: foc4 3 t15: fo	Initial +1.158e-01 +3.150e-04 +5.912e-01 +2.487e+01 +3.827e+01 +1.665e+01 +1.014e+02 +2.119e+01 +1.433e+02 +2.145e+01 -5.376e-03 -5.088e-02	Final +8.581e-02 -3.143e-04 +6.146e-01 +3.266e+01 +3.266e+01 +5.153e+01 +2.289e+01 +2.289e+01 +2.143e+01 +2.270e+01 -2.484e-02	Precision 1.0e-02 1.0e-03 1.0e-01 1.0e-01 1.0e-01 1.0e-01 1.0e-01 1.0e-01 1.0e-01 1.0e-01 1.0e-01 1.0e-02 1.0e-02	(Fin-Des)/P +8.581e+00 +3.143e-01 +6.146e+00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Desired = 0 = 0 < 150 < 150 = 0 = 0
<pre>t14: Fit 17 t15: Fit 18 t16: Fit 19 t17: Fit 20 t17: Fit 21</pre>	+1.487e+02 +2.367e+00 +6.993e+01 +5.935e+00	+1.239e+02 +2.228e+00 +6.356e+01 +6.123e-01	1.0e-01 1.0e-01 1.0e-01 1.0e-01		< 150 < 150 < 150 < 150 < 150





- The Kicker dialog modification
- Correction to Output file format for MC plots
- ID modifications for CS-Qgg & CS&dBE plots
- Monte Carlo : modifications for Eloss and Range with Faraday cup
- New Super-FRS configurations
- Kantele calculator: Gamspeed modifications
- "Options" dialog large revision