

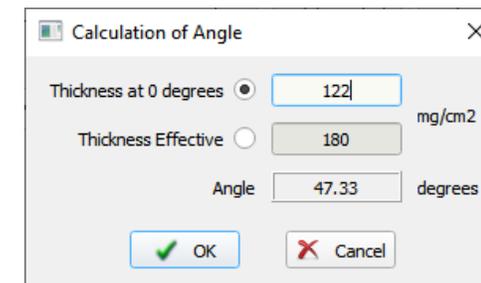
// 14.3.3 03/25/20

```
// Thick(material) -> Calibration dialog (without channel calibration
buttons)
// Thick(material) -> Angle dialog
// Thick(material) -> Calculate density dialog
// Thick(material) : global internal connection
// Thick(material) : emit QueuedConnection signal to Refresh (study and
implementation)
// ShowSetup (left panel) is refreshed after Thick(material) changed
```

// currently it used to

1. daytime: Ksenia works on porting (Oleg – research and meeting time)
2. Ksenia & Oleg 6-9PM -- working jointly to update Ksenia's results, to discuss problems, results and plans
3. nighttime: Oleg works on porting
4. then Oleg
 - * updates modification on Ksenia's computer
 - * upload a new version in onedrive cloud
 - * send LISE++ porting status

all new LISE-Qt versions are uploaded **DAILY** in the next folder
https://1drv.ms/u/s!Aj8_a9I2zt5kivsKcdzVsKNRZjuzOw?e=a7odiu

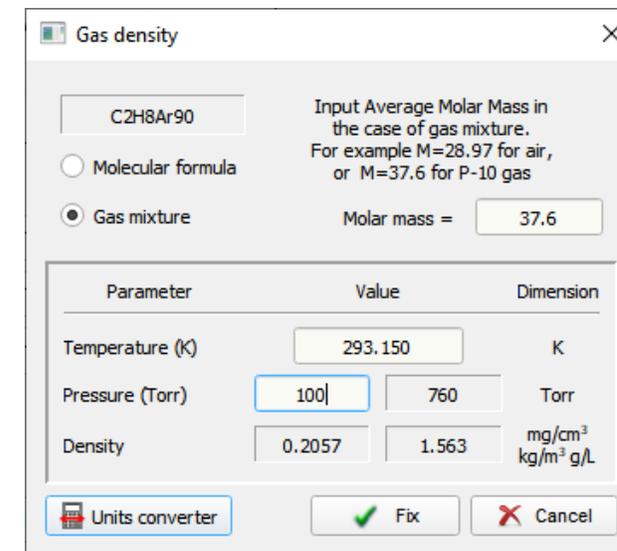


Calculation of Angle

Thickness at 0 degrees mg/cm2

Thickness Effective mg/cm2

Angle degrees



Gas density

Input Average Molar Mass in the case of gas mixture. For example M=28.97 for air, or M=37.6 for P-10 gas

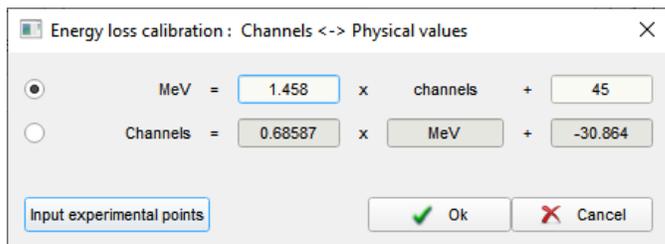
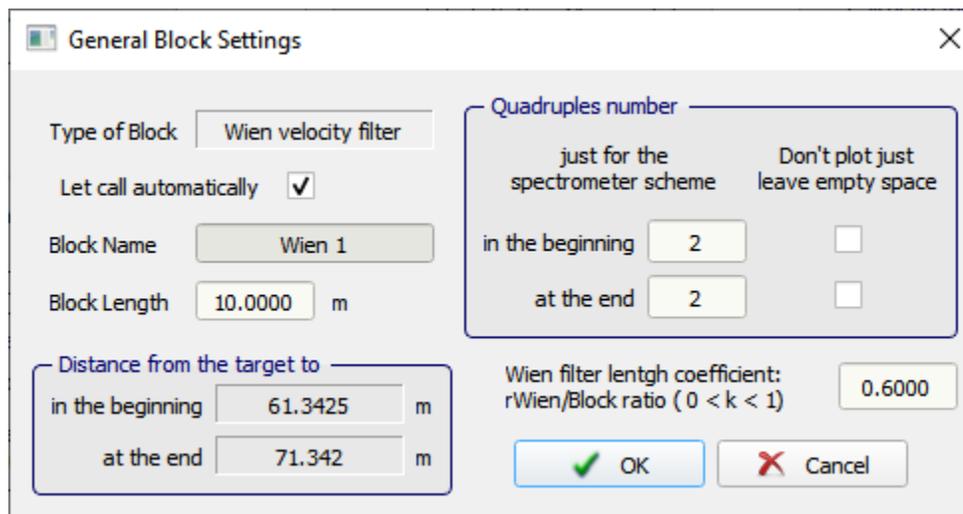
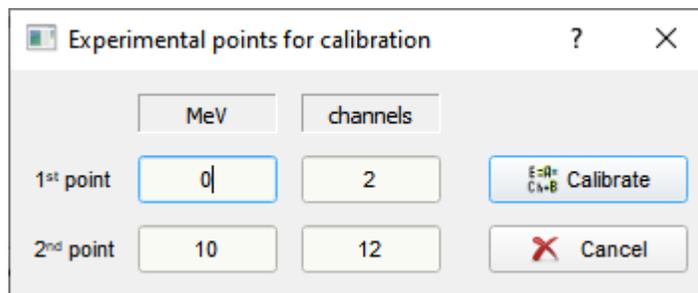
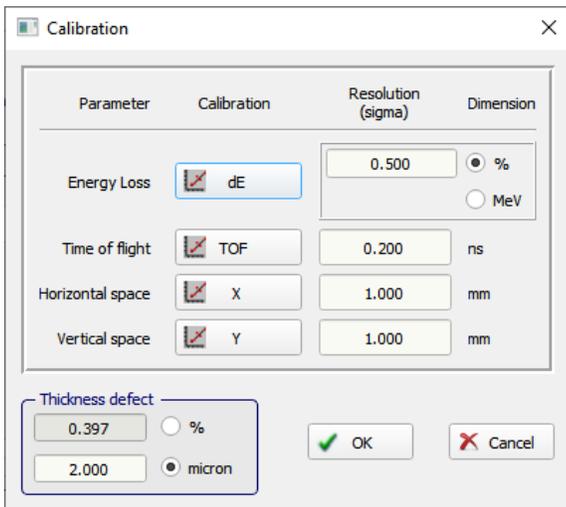
Molecular formula

Gas mixture Molar mass =

Parameter	Value	Dimension
Temperature (K)	<input type="text" value="293.150"/>	K
Pressure (Torr)	<input type="text" value="100"/> <input type="text" value="760"/>	Torr
Density	<input type="text" value="0.2057"/> <input type="text" value="1.563"/>	mg/cm ³ kg/m ³ g/L

// 14.3.4 03/26/20

```
// Thick(material) -> General block settings (DIALOG finally completed)
// Thick(material) -> Calibration dialog (DIALOG completed)
// Thick(material) -> Calibration dialog -> calibration channel (DIALOG completed)
// Thick(material) -> Calibration dialog -> calibration channel dialog -> data input dialog -> introduction of new static values
// Thick(material) -> Calibration dialog -> calibration channel dialog -> data input dialog (DIALOG completed)
// ShowSetup (left panel) : LabIcons were connected to timer
// ShowSetup (left panel) is updated after Thick(material) name changed (before only thickness)
// o_Phys->o_Calibration class reconstruction based on QString class
// Thick(material) base: new approach for QWidget *parent to obtain "parent" information
```



config	A1900_2019	total
option	A1900_2019	dp/p
version	14.3.10	1.23%

Projectile Fragmentation

// 14.3.5 03/27/20

// Thick(target) -> Absorbed dose dialog (DIALOG completed)
 // Thick(wedge) -> Wedge dialog : internal connection (80% completed)
 // bunch of small corrections in different blocks

// 14.3.6 03/28/20

// Thick(wedge) -> Wedge dialog : (DIALOG finally completed)
 // Tabulation order has been corrected in "completed" dialogs
 // "Separator tuning" works (Brho calculation for setting fragment). Brho results are shown in ShowSetup (left panel)

// 14.3.7 03/30/20

```
// Thick(wedge) -> Wedge dialog -> Profile Wedge Base dialog : 75%
// Disperse Optical Blocks[DOB] (7 dialogs) -> /
// Dialogs redesign due to [DOB] BASE class implementation /
// and items connection : 10%
// Configuration Renewal and Redraw ShowSetup (left panel) after LISE
file reading (DONE)
```



```
// 14.3.8 03/31/20
// Thick(wedge) -> Wedge dialog -> Profile Base dialog (DIALOG completed)
// Thick(wedge) -> Wedge dialog -> Profile Wedge dialog (DIALOG completed)
// Thick(wedge) -> Wedge dialog -> Profile Curved dialog (50% connection)
// Thick(wedge) -> Wedge dialog -> Profile Custom dialog (25% connection)
// Disperse Optical Blocks[DOB] (7 dialogs) -> redesign 100%
// Disperse Optical Blocks[DOB] (7 dialogs) -> connection 10%
// User ProgressDialog (DIALOG completed)
```

Wedge degrader in dispersive focal plane

Dispersion Plane: X (horizontal) Y (vertical)

Mode: Choose block: to calculate an angle for the setting mode after it
D4

Calculate

mode: Wedge angle (mrad)

Achromatic -0.03 Fix

Monochromatic -5.45 Fix

Fixed in the code -0.0259

To plot a dependence from angle

Degrader properties

Block: I2_wedge

Degrader Profile: Wedge degrader

Setting fragment: 42S16+

-29.5 <-- slits (mm) --> +29.5

-36.59 <-- angle (mrad) --> +36.59

min max

For the central trajectory

Thickness: Al (1200 micron)

Energy before the degrader: 131.95 MeV/u

Energy after the degrader: 122.48 MeV/u

Wedge angle calculations from formulae (mrad)

Achromatic: -4.31 Fix ?

Monochromatic: -5.44 Fix

OK Quit Help

Profile Degrader

Wedge angles calculation

78%

Be patient, I'm working ...

Restez calme... Tout va bien!

Только спокойствие...

Всё будет просто замечательно!

Cancel

Curved Profile degrader focal plane

Dispersion Plane: X (horizontal) Y (vertical)

Mode: Choose block: to calculate an angle for the setting mode after it
D4

Calculate

Wedge angle (mrad)

Achromatic

Monochromatic

Fixed in the code

Current profile: 0.123

To plot a dependence from angle

Degrader properties

Block: I2_wedge

Degrader Profile: Curved profile

Setting fragment: 42S16+

-29.5 <-- slits (mm) --> +29.5

-36.59 <-- angle (mrad) --> +36.59

For the central trajectory

Thickness: Al (1200 micron)

Energy before the degrader: 131.95 MeV/u

Energy after the degrader: 122.48 MeV/u

Wedge angle calculations from formulae (mrad)

Achromatic ?

Monochromatic

Custom Shape Degrader

Choose mode

X0: 2.888 mm Calculate

L: 3.51 mm Plot

h: 4.21 mm

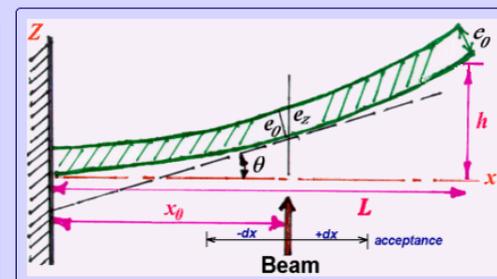
e0: 4.21 micron Make it as Current

Current profile

what's up?

Method to keep the profile: Inside LISE++ file Attached profile file

Load profile from file Save current profile Browse See current profile Erase current profile



```
// 14.3.9 04/01/20
// Merging updated GIT version and 14.3.8
// Erasing "OpticsWidgets" directory
// Global revision of LISE images (directory "Icons")
// Working on Disperse Optical Blocks[DOB] (20% progress)
// [DOB] -- magnetic dipole type --> creation of "Brho base"
// Double inheritance (Properties class-> "Brho" Base -> Magnetic dipole classes) -- still under construction
```

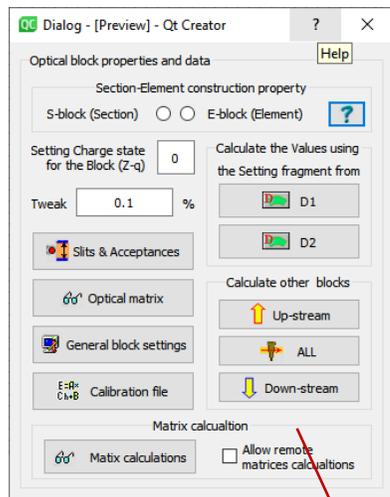
```
//-----
// 14.3.10 04/02/20
```

```
// Double inheritance (Properties class-> "Brho" Base -> Magnetic dipole classes) -- DONE! (see next slide)
// it will be used currently for Dipole_magnetic, d_GNS, d_D6 blocks
// this development will be important in future for OpticalMatrix and Plot_CS branches

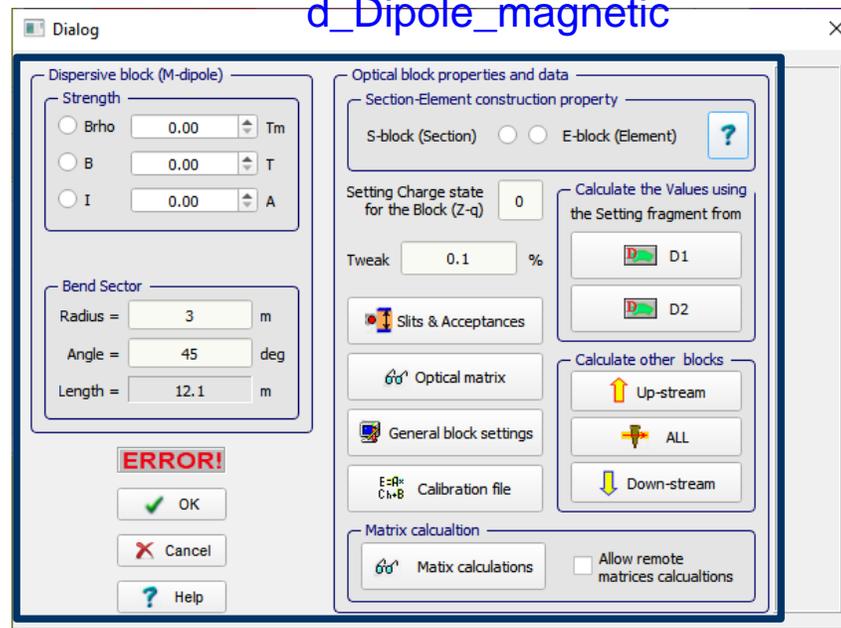
// D_Acceptance dialog : 90% re-design, 20% connection
// LISE++ images(icons) revision was done. Corresponding dialogs were updated with new image locations

// Creation of \d_BlockOptic\Magnet\ and \d_BlockOptic\Acceptance\ directories
// Erasing (came with GIT 14.3.7 version) d_ElectricDipole.*, d_DelayFile.*, and 17 files d_athick*
```

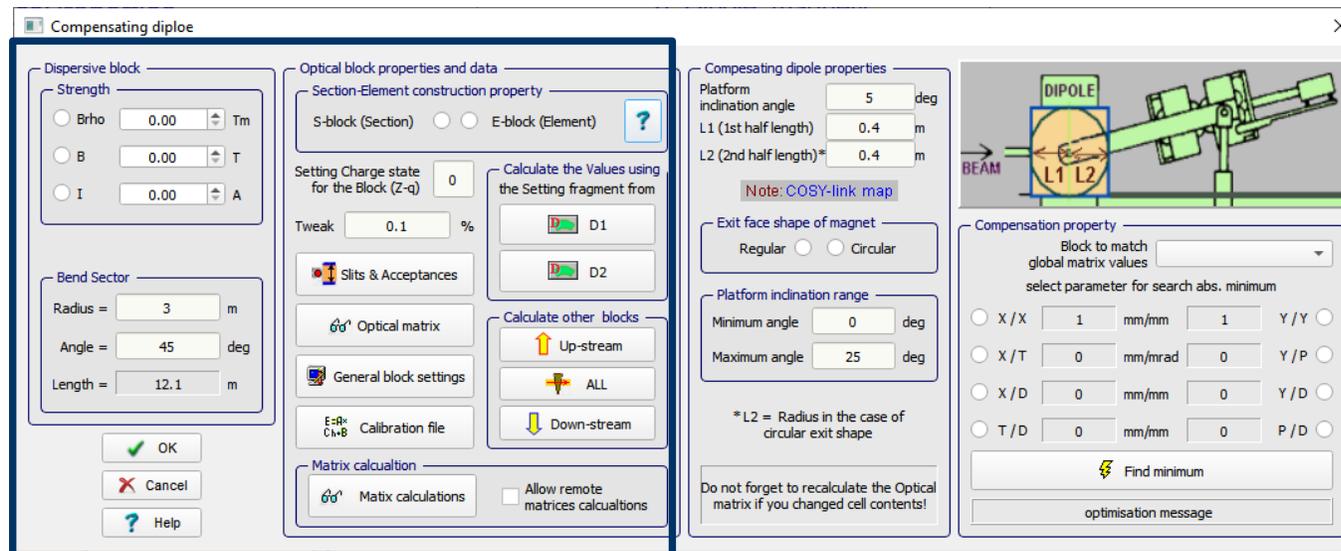
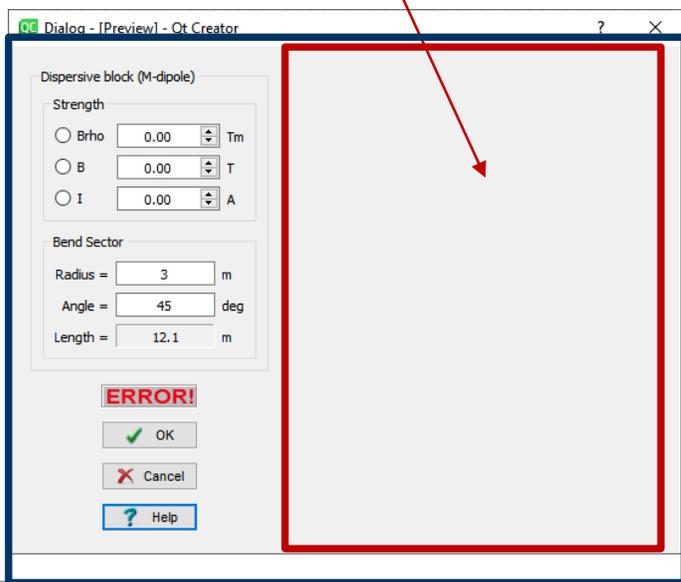
d_OpticsProperties



d_Dipole_magnetic



d_Dipole_base



First priority:

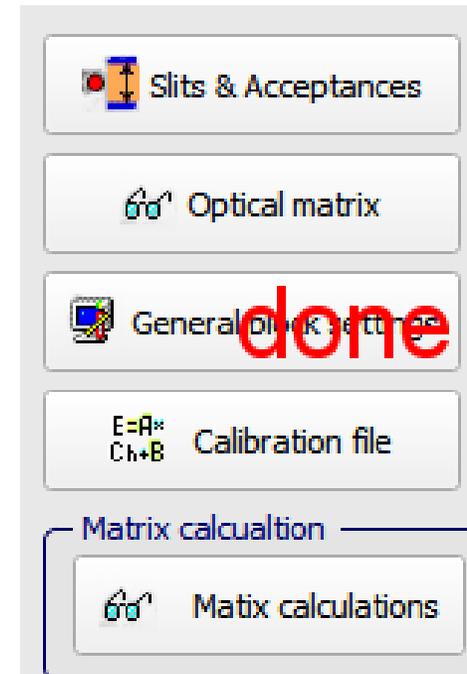
Material blocks

- Curved profile dialog
- Custom shape dialog

Dispersive magnetic blocks

- Dipole magnetic
- Dipole compensating
- Dipole GF

Including



Where “Optical matrix” – development of two base classes for inheritance....