

v.16.6
08/06/22

- Selection of transmission calculation methods to use with beam dump slits
- Migrating to Qt63 and C++ 17
- LISE graphics library revision (no more High DPI scaling option in Qt63)
- Revision of solenoid block operations
- Improving safety of the package
 - Class "Celement" and all its descendants (projectile, target, ..) were updated for "const" pointers and functions to make the code more secure
 - Implementation of the new class "ValueErr" to operate with databases (including mass tables) and cross section user files.
- Compatibility with Linux and Mac, and make the package more secure:
 - new LISE functions: strcpyL, strcatL, strncpyL, QstrcpyL, QstrncpyL
- List of other significant updates (v.16.4.4-16.6.1)

https://lise.nsl.msu.edu/16/16_5_MethodSlits.pdf

Acceptance / Slits dialog: slits use for transmission methods

Angular Acceptance

Shape: Rectangle Ellipse

Horizontal ±: 1000 mrad

Vertical ±: 1000 mrad

Solid angle: 2888.37 msr

Horizontal plane: Use in Calculations

dispersion [mrad/%]: -5

x' - momentum [%] (accept/disp): 100

Vertical plane: Use in Calculations

dispersion [mrad/%]: 0

y' - momentum [%] (accept/disp): 100

"ExitBeamDump" block : Apertures (throughout), Slits

Horizontal: Left limit (aperture) -125, Left slit -125, Right slit 21, Right limit (aperture) 125

APERTURES: Ellipse

SLITS: Rectangle

Horizontal Slit: separately, Use in Calculations, Show in schematics

Vertical Slit: conjointly, Use in Calculations, Show in schematics

Vertical: Top limit 120, Top slit 120, Bottom slit -120, Bottom limit -120

Horizontal plane dispersion (mm%): -10.37, x - momentum (slit / dispersion) total 14.07

Vertical plane dispersion (mm%): 0, y - momentum (slit / dispersion) total 100

Slits are used for fragment transmission analytical calculations: "Distribution" method, "Ellipse" method

"Distribution" transmission method

```
bool useSlits = bc->slit.GetWork() &&
(B->slits.useDistributionMethod || Ce->primaryBeamFlag());
```

"Ellipse" transmission method

```
bool useEllipseSlits = c->slits.useEllipseMethod || calc->primaryBeamFlag();
if(c->CheckAllOpticBlock() && useEllipseSlits) PL->PassSlits(c, disx, disy);
```

Unchecking a selected method means:
These slits won't be used for fragments,
and they will be used only for a primary beam.

 16.4.18 07/24/22
 dialog colors changed to have more green impact

16.5.7 07/27/22
 revision of d_About dialog.
 timer stop at closing. no more modality

 16.5.8 07/27/22
 working on CGraph size thinking about 4K-monitors and Cytrix
 multimonitor mode

 16.5.10 07/27/22
 ETACHA update for Graph window tilte
 update all LISE package satellites for new green style

 16.5.16 07/29/22
 d_MC dialog : TKE message about resolution

 16.5.17 08/01/22
 d_Beam dialog : correction for initial beam energy in U-format

 16.5.19-21 08/01/22
 no more FlagRutherford in analytical calculations
 monteCarlo : rutherford case -- max(Rutherford, stragglng)
 monteCarlo : no acceleration due to energy stragglng!

Corrections, [Fixed] : bugs

 16.4.14 07/23/22
 "show_calc "correction for Qreaction

 16.4.15 07/23/22
 correction for d_Database / User ME file / ME Error

 16.4.16 07/23/22
 correction for s_me_table::GetMeTable for "new" value return

16.5.2 07/25/22
 Fixed: bug in SigmaParallel, Friedman's case. (HW)
 GetSeparationEnergy function used return as double instead ValueErr

 16.5.5 07/27/22
 correction in Creglage::qname for mode 2

 16.5.6 07/27/22
 killExpZero correction for length

 16.5.24 08/05/22
 bug correction: d_Kicker for slits in CmCancel function