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9.10.388 11/17/16
* taulise_optic: new approach for accumulated uncertainties
* GasCell range utility : energy falls in detectors
- fill_gauss_asym : option "SameArea"
- SumGaussian subroutine: option "GasCell"
* Solenoid : Brho() command in taulise calculation - fixed
* Beam dialog : brho-value after target
* Small correction for X-space coef. on Optimum target plot

9.10.380 11/09/16
* crash in the case of Wedge after rotation block
- p_Block_Optic : XX_global_coef choose between max abs o->xx or -> o->xy
- taulise_optic: XX_glob_coef zero case for wedge calculations
* MC : o_mc_trans: "cap" for zero velocity

9.10.377 11/07/16
* **TwinSol utility** : no more scratch configuration
* **Radiation Residue calculator** : STEP 0 modification for low-yield (229Th case)

9.10.375 11/03/16
* "**Transmission-Optics**" : correction of accumulated uncertainty due to wedge thickness defect
* Actual Installer v.6.5
* Radiation Residue calculator:
- Flag stiffness correction
- CmRB modification to stay FlagCalc

9.10.371 10/28/16
* **Radiation Residue calculator**
- new options for 2D-plot and Isotope Conversation Law
- New options min & max T1/2 for unbound and stable isotopes in Radiation Residue calculator

* "GetHalfLifeForRadiationDecay"
- special case for da_alpha, da_betam, da_betap
- Procedure T1/2 and Decays from database to radiation have been changed : 221U case with T1/2/

9.10.363 10/21/16
* **Radiation Calculator**
- Stiffness flags
- Stiffness window colors
- search for the bug

9.10.361 10/14/16
* **Solenoid** block class : revision
- Solenoid block dialog: modification for block selection to get value
- Solenoid block class : OPTICAL_MATRIX omReglage
- TwinSol configuration and file in the LISE++ package

* table2014.iso & table2016.iso

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9.10.351 09/27/16
* Names and symbols for Z=113,115,117,118 have been updated

9.10.350 09/26/16
* **Branching** database :
- The database has been filled out up to Z=118 based on NNDC
- Branching values are shown in the transmission window

9.10.347 09/21/16
* **Kinematics calculator**:
- Correction for break-up with gamma
- Correction for 2D two-body kinematics in CMS

9.10.345 08/22/16
* **Radiation residue calculator**
- text output or results
- optimization of calculations with unbound nuclei
* branching ratio database done up to Z=50
* new decay colors
* correction for RadioButtons-indexes in the MC file dialog

9.10.342 08/09/16
* **New decay mode** : beta+ p-decay
* decays and **branches** up to Z<=38

9.10.338 08/03/16
* **Decay branching** ratio :
* **New decay mode** : beta- neutron decay
* Decay branching ratio file \bin\branching_ratio.lbase
* Decay branching ratio dialog
- Call the Branching Ratio dialog from Show Transmission window and
the Isotope options dialog
- Branching Ratio Dialog : Z-wallet
* Branching Ratio is used in Radiation Residue calculations

9.10.332 08/01/16
* **Radiation residue calculator** v.2.

9.10.321 07/15/16
* Radiation residue calculator

9.10.312 06/28/16
* "o_mass.cpp" modification for "decay_analysis"
* PACE4 new version 4.21 (serious bug for Ad() function)

9.10.307 06/10/16
* ETACHA5 GUI is implemented in the LISE++ package
* template for GEMINI++ GUI in LISE++

9.10.305 06/09/16
* search a block with slits closest to wedge
* modification of boundary condition for Envelope plot
* permit editing of optical matrix d/d element

9.10.302 06/07/16
* Import a transport file:
- checking for command 2.0 before and after dipole
- fitting constraints

* Splitting Use Dipole Fringe Field on Entrance and Exit options
* Dipole transport dialog and LISE file structure modification

9.10.298 06/06/16
* correction for Matrix Units in the Electric Dipole dialog
* Ideal Magnet dialog: modification for Electric Dipole toroidal case

9.10.296 06/02/16
* **SECOND ORDER solution for Electrostatic Dipole**
* EMMA_2016 and SHELS_2016_o2 files
* max.possible angle in MC calculations
* Electrostatic Dipole -- using half of Erho deviation and M-matrices in MC calculations
* Work under the case then Corresponding Brho & Erho equal to 0

9.10.286 05/24/16
* **Update of FRIB masses** (SV-MIN.lme & SKMS.lme)
* modification in the "Global" code
* ODE and RKF45 files implementation
* HRS (FRIB) example in LISE++
* o_Ionization modification to check Z threshold

wwwwwwwwwwwwwwwwwwwwwwwwwww
It has shown at the AIS meeting on 04/11/2016
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9.10.280 04/04/16
* Correction in the Kinematics Calculator:
the string for reading energies of neutron and gamma has been uncommented...

9.10.279 03/31/16
* Q-optimal value and Total Excitation energy (based on the Q-optimal) in the Two-body mode of the Kinematics Calculator

9.10.278 03/29/16 * Update: Assistant to convert Fortran to C (v.2)

9.10.277 03/21/16
* Reverse configuration documentation
* LISE.xlsm update

9.10.275 02/25/16
* modification of "MC Plot to file" with new function "sprintf_at_end"
* new function "sprintf_at_end"
* Zero.lme in the package
* Link correction for Sweden TOI
* more digits in Global Calc SUM in the status bar

9.10.270 02/03/16
* FRIB mass tables in the LISE++ package
* converter of FRIB mass tables to LISE lme files

9.10.266 02/01/16
* New 2016 Dubna configurations
* NEW IDs for Reverse configuration commands
* Correction for Show Transmission window:
- message for AF region transmission
- case AF fission is only one EER region passed

9.10.262 01/11/16
* Overall transmission modification for missing EER in the Abrasion-Fission case

9.10.260 01/09/16
* Help from Fit constraint block
* Redrawing Acceleration in Block edit mode (Setup & Optics)

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* Import of Transport files: correction for Dipole -- E-method and remote option
* Plotting GEMINI Cross Section calculation results
* NEW ID Rutherford command modification

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9.10.255 01/05/16
* Optics Optimizer
- correction for deduced beam vector values
- modification for beam sigma edit

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9.10.253 01/04/16
* Range optimizer modification for charge state case

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9.10.252 12/30/15
* ID Rutherford command modification. before was overlapping with "check scheme" ID
* Attempt to clear contour statistics : class Contour

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9.10.250 12/21/15
* correction MC for reaction place : new function MakeProbabilityDistribution2
versions 9.10.237-249 contain this bug

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9.10.249 12/16/15
* Velocity parameters in LISE output rays file
* Correction for search of the end of input rays file

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9.10.245 12/09/15
* Fixed : Spikes in energy distributions after passing thick materials
- issue was with dP in L_distr->SumGaussian
* Fixed bug in 9.10.243 for energy after wedge

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9.10.243 12/09/15
* revision of using dP accumulation:
Important for spatial distributions after passing wedges

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9.10.238 12/08/15
* option of Rutherford scattering of primary beam in target in MC mode using the new class "RuthYield"

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9.10.237 12/07/15
* New class "distribution2P"
- package creation for probability distribution2 to get random values - updating for this new class all previous probability fragments of text

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9.10.229 12/04/15
* new class "RuthYield"
- new utility "Angular Straggling & Rutherford scattering probabilities in compound" in Menu->Utilities->Reaction Utilities

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9.10.219 12/02/15
* Kinematics calculator
- Grazing angles in Lab and CM in Kinematics plots - Rutherford
plot : impact parameter plot as function of Theta - Rutherford
plot : closest approach as function of impact parameter

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9.10.215 12/01/15
* X-log option for Range,dE/dX,ang.straggling plots
* Minimum energy for angular straggling changed
* Monte Carlo transmission was modified for slicing thick materials

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9.10.209 11/19/15
* Optics Optimization dialog
- Plot of Optimization Beam Sigmas - Button "Edit Optimization Beam Sigma vector"

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9.10.207 11/17/15
* EMMA (TRIUMF) configuration
* Angular acceptance recalculation (rectangle and ellipse cases)

9.10.205 11/13/15
* Reversed configuration construction in LISE++

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9.10.191 11/06/15
* Correction for E-Quad optimization

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9.10.190 10/28/15
* Using Inverse angles in envelope plots with negative drifts
* Exponential format in optical matrices
* Close action for an inrays file after leaving the corresponding dialog

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9.10.187 10/22/15
* do not write non-useful (up triangle) Secondary Matrix elements in file
* exponential format in optical matrices

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9.10.186 09/29/15
* Modifications of 3 EE Regions search settings

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9.10.185 09/25/15
* MC options : Radial and Angular values sign
* Label correction for 2D-plots in the case of other reaction and charger states

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9.10.183 09/21/15
* Q (current charge) correction for Mass calculations in Monte Carlo mode
* Acculinna (Dubna): 27s file and calibrations

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9.10.181 09/16/15
* DRAGON & SECAR reaction files with two-body reaction mechanism
* Two-body reaction : HI & gamma case
* Two-body reaction : modifications for charge state
* Angular transmission : correction for gates

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9.10.177 09/11/15
* FMA (Argonne) files and configurations in LISE++
* S3 (GANIL) files and configurations in LISE++

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9.10.174 09/10/15 * Improvement of Dif.CS file utility

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9.10.171 08/27/15
* Update of SECAR configurations for the new Wien's feature
* Keeping Dispersion constant in Wien filter

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9.10.169 08/20/15
* SECAR configurations
* Wien-filter and COSY-link. Calculation of the dispersion coefficient

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9.10.167 08/17/15
* Shima charge state distribution width correction in LISE++.exe and LISE for Excel
* Optics fit : struggling with exponent overflow
* Wien filter : bending direction

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9.10.163 08/10/15
* MC output to file
- number of Output Ray fields increased up to 15 - new modes to save in LISE++ compatible input format - mm & cm option – new file filters for MC input and output rays
* T1/2 in result files

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9.10.156 07/27/15
* New user Beam vector "OptBeam" designed for Optics Optimization
* Second order optics optimization
- Block "Fit" : modification for Second order constraint
- "Block "Fit" dialog : Show Abberation & 2nd order matrix lists
- Using Sextupole fileds in the Optimization procedure

9.10.142 07/22/15
* DRAGON @ TRIUMF files and configurations

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9.10.141 07/19/15
* Correction for Angular transmission "PreviousOpticBlock -> PreviousAllOpticBlock" -- may affect on angular acceptances cut

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9.10.140 07/17/15
* SetupQ modifications to show a ED voltage value correctly
* eMultipole "block" for BlockPlotPosition in the Envelope plot
9.10.138 07/15/15
* Do not calculate GOM after Faraday Cup : important for Quad values
* BlockPlotPosition modification for multipoles
* Block Distribution plots after blocks : corrections in menu to avoid fitting blocks

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9.10.133 07/13/15
* Kinematic calculator: Modifications with Energy and Intensity edit cells, More digits for energy outputs
* "Electron binding energy in ion mass calculations" checkbox in the Production mechanism

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9.10.131 07/10/15
* Ion Mass Calculator
* Ion Mass correction for binding electron energies
* Ionization Energy database

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9.10.128 06/29/15
* Show Initial Minimization Conditions in the Optics Fit dialog
* Modification of the Special limit function for minimization: const step 0.001

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9.10.126 06/26/15
* lmbc_core.c modification due to crash

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* new labeling of the beam-sigma vector values
* New value "Beam vector - R" = sqrt(x^2+y^2) in the Fit constraint

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9.10.123 06/24/15 * Important Corrections in E-quad and M-multipole dialogs

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9.10.119 06/23/15
* Minimization output modification
* User Break in the Minimization process
* the Kickier dialog modification
* Correction in Output file format for MC plots
* ID modifications for CS-Qgg & CS&dBE plots
* Monte Carlo : modifications for Eloss and Range with Faraday cup

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9.10.113 06/18/15
* New Super-FRS configurations
* Kantele - Gamspeed modifications
* "Options" dialog large revision

*** Fitting ****
- SetFocus back in the Fast Edit Optics dialog
- Global reconstruction of Fit dialog in order to accept changes from the "Fast Edit Optics" dialog
- Change Fitting option "Active" in the Fast Editing optics dialog
- New Option: show "Fit" blocks in Scheme and Setup windows
- MC apparatus without fit-constraints blocks
- New functions BLOCKnext and BLOCKprevious with "noFit" options
- Do not show fit constraints in the menus
- Do not show no"Active" fit constraints in Scheme and Setup Window
- Option "Active" in Fit Constraints
- Corrections for Separator scheme in the case of Fitting block

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9.10.100 05/22/15 * **Optics Minimization in LISE++**

***** Fitting ******

9.10.100 05/22/15 Lower and Upper limit constraints in optics minimization
9.10.99 05/22/15 Operand in the Fit class
9.10.98 05/22/15 Constraint Combobox in the Fit dialog
9.10.93 05/06/15 Corrections for Fit calc-block
9.10.92 05/05/15 Gauge at FitDialog
9.10.91 05/05/15 Beam Sigma and Matrix Envelope plots from FitDialog
9.10.89 05/05/15 Fit outpt window update
9.10.88 05/04/15 Fit works!
9.10.87 05/01/15 Fit dialog construction
9.10.86 04/30/15 ShowSetup Window and QuadEdit dialog modification due to Fit block
9.10.84 04/30/15 Fit settings in LISE file
9.10.83 04/30/15 Fit block dialog construction
9.10.80 04/24/15 Block icons modification
9.10.78 04/24/15 New optical block "Fit"
9.10.75 04/23/15 Run levmar samples from Dialog Optics Fit Settings
9.10.74 04/23/15 structure in Options and LISE files --> Levmar_fit_options
9.10.73 04/23/15 Dialog Optics Fit Settings
9.10.72 04/22/15 FastEditOptics dialog : sign "FIT"
9.10.71 04/22/15 Read & Write B_fit class in LISE++ files
9.10.70 04/22/15 Fitting boxes in Multipole and EQuad dialogs
9.10.69 04/21/15 New class for Optical Blocks -- "FitValue"
9.10.68 04/21/15 TDOB dialog -- issue with Remote and COSY-link including message for COSY-link
9.10.64 04/20/15 ExperimentalSettings->Optics->Optimization
9.10.63 04/20/15 LevMar Minimization

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***** Other ******

9.10.97 05/21/15 Typos in Foil LifeTime
9.10.96 05/21/15 Separate MC Transmission for isotopes in the list
9.10.95 05/19/15 Modifications in ShowBlock for Drift and Fit blocks
9.10.94 05/06/15 Corrections for other new "calc"-blocks !!!
9.10.90 05/05/15 Beam Sigma plot from OpticsSetup
9.10.85 04/30/15 Optimization for file read/write : no Slits, no Acc, no Matrix for some optical blocks
9.10.82 04/27/15 block names in Setup dialog modification
9.10.79 04/24/15 Spectrometer design dialog modification
9.10.77 04/24/15 Slits icons
9.10.76 04/23/15 New drift icons
9.10.67 04/21/15 OpticTableEdit dialog --sign "R" in CalcMatr column for Remote quad
9.10.66 04/21/15 checkboxs (2nd order and Remote) Equad dialog modification for Cosy-Link
9.10.65 04/21/15 checkboxs (2nd order and Remote) Multipole dialog modification for Cosy-Link

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9.10.62 04/15/15
* Moller95 masses
* Labels "L_direct@CpCt"
*"aem" -> "amu"

WWWWWWWWWWWWWWWWWWWWWWWWWWWWW

9.10.59 04/06/15
* Range Gas Cell -- modifications of energy loss distribution for passing material and stopping
* "Dummy" blocks modifications for the Scheme
* Physical Calculator modifications for Range and degrader values
* Range table up to 50 GeV
* Nubmebr of blocks increased up to 500
- bug correction in the WShow subtoutine
- ShowCalc -- modification for charge state numbers (-3d)
- Fusion reaction names correction
- Plot1 legend size
- new MaxZtargetHubert=92, Number_Tab_ELOSS = 100

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9.10.49 03/23/15 * Fusion dialog: important change for QE-channel

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9.10.48 03/20/15
* Fission barrier
-- vanishing factor for data from FILE based on Sierk or Cohen models
-- If Sierk barrier <0 (Z>110 or other conditions) then use Cohen
-- New Fission barriers from P.Moller et al., PRC91(2015)024310
* Fusion dialog
-- correction for DIC
-- Partial cross sections revision
-- Elastic Scatttering partial cross sections
-- Fission barrier settings warning for high Z and Sierk or Cohen models

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9.10.39 03/16/15
* The Fusion dialog:
-- revision of partial cross sections
-- E_critical and Channels calculation flag in the fusion dialog

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9.10.37 03/16/15 * Modification in "FindSimpleWedgeAnlge" subroutine for zero-dispersion of 2nd half

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9.10.36 03/13/15
* Upgrade The Show Values window in the Fusion dialog
* Correction for overall transmission in the ShowCalc window
* Initial distribution for channels in the Fusion dialog
* De-excitation channels of compound plot
* Momentum L is new parameter for S_Element and Abrasion-Ablation
* Main menu modifications
* New class "TListShowWindow"
- TShowMCtrans based on TListShowWindow
- W_showCalc based on TListShowWindow

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9.10.27 03/03/15
* Fusion mechanism dialog global revision
- Plots V=f(R) & V=f(R,L)
- Bass, T, P_CN B=f(L), R_B=f(L) plots
- Partial Cross Sections plots
- L_direct, direct reaction CS
- L_max by LISE++ from V
- help links, button Show Details and CS
* Main menu modifications; New item "Mechanism"
* Fission barrier plot as function of L, Yrast line
* Different
- Atomic number of target in the ShowSetup
- Angular Momentum in the APF excitation plots
- Gadget and menu orders have been changed
- Plotting method : V-Histogramm
- 1D-plot : user line thickness
- reaction characteristics from Energy : corrections

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9.10.4 01/30/15
* "custom shape degrader" dialog: option to skip energy/position calculations in polynom mode