LISE Library for Linux Documentation

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Getting Started

Necessities

- Qt 6.8.1 installed
- The plugin and lisecfg folders
- libLISE_excel64.so.3.0.1 in the same directory or a place your code can see
- Examples and library can be found here

Functions and What They do

Functions

- close_struct: Closes all of the databases and clears memory.
- set_charge_state: sets the charge state calculation method.
  - 0 - Hubert
  - 1 - Ziegler
  - 2 - ATIMA 1.2
  - 3 - ATIMA 1.2 no LS
  - 4 - ATIMA 1.4
- set_loss: Sets the energy loss calculation method.
  - 0 - Winger
  - 1 - Leon
  - 2 - Shima
  - 3 - Global (+Winger)
  - 4 - Global (+Leon)
  - 5 - Schiwietz
- set_straggling: Sets the energy straggling calculation method.
  - 0 - Anne
  - 1 - ATIMA
- charge_double: Returns the probability of a certain charge state.
- charge_option: Same as charge_double, but using a specific charge state method without having to set one.
- charge_qmean: Calculate the average charge state of the projectile.
- charge_dq: Calculates the width of the charge state distribution.
- chargeSchiwietzaGas: Compute the charge state using the Schiwietz Gas model.
- treste: Calculates the energy after the target.
- treste_option: Same as treste, but using a desired method.
- trange: Calculates the range in the target.
- trange_option: Same as trange, but using a desired method.
- straggling_energy: Calculates the energy straggling.
- stopping_power: Calculates the stopping power of the projectile in the target
- show_option: shows the currently set options
- global_code: Calculates the energy of various charge states after the target
- isotope_mass: Returns the nuclear mass
- isotope_mAtom: Returns the atomic mass
- isotope_mqe: Returns the mass of an ion
- isotope_mqq: Returns the mass of a fully stripped ion