The best solution for rapid investigation with SIMION.

Virtual Device
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RAS
INSTITUTE FOR
ANALYTICAL INSTRUMENTATION
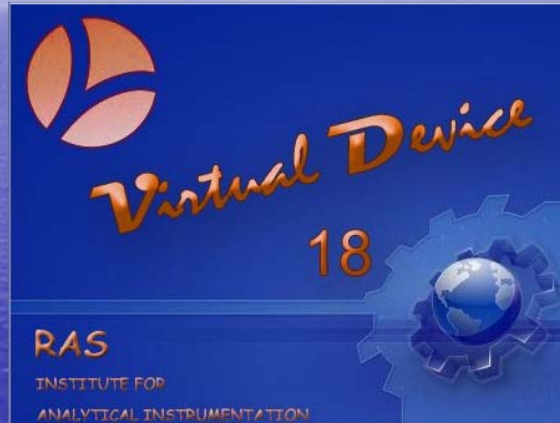
Virtual Device is an Add-on software to SIMION v.7 and further versions.

Covers several features not fully developed in SIMION.

CAD program allows to quickly create very complicated geometry and transform it to SIMION.
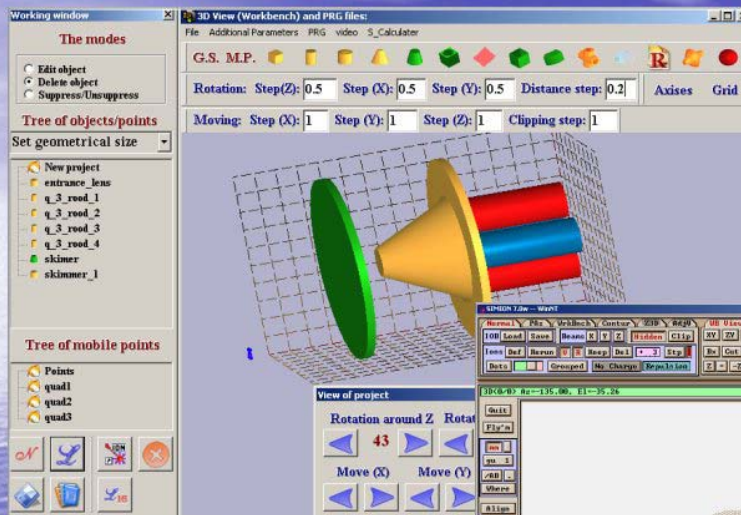
CAD program is based on the idea that a user can use finite number of electrodes to recreate specific geometry, and each typical electrode can be represented as a bit of program in SIMION language.

Advantages of this way of creation:
1. Very quick creation of 3D geometry.
2. Very simple way of rearranging of geometry (shifting & moving electrodes relatively to each other).
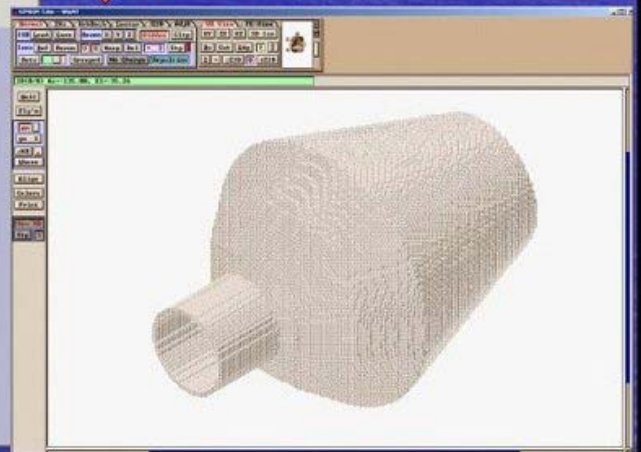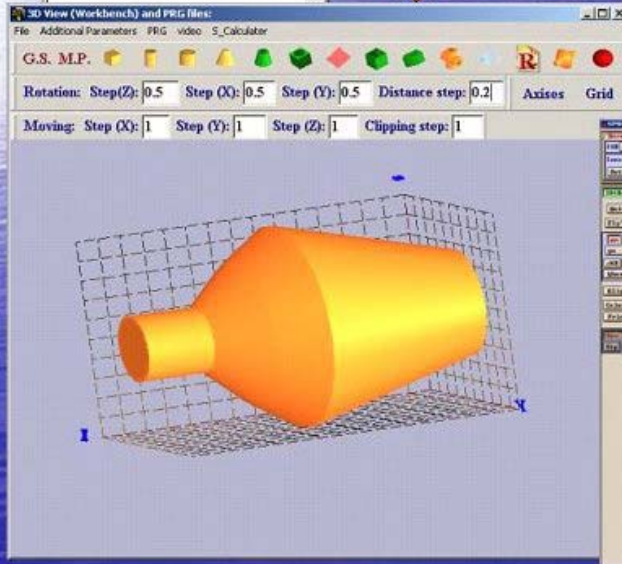3. Automatic transformation of 3D geometry into geometrical file (GEM file).
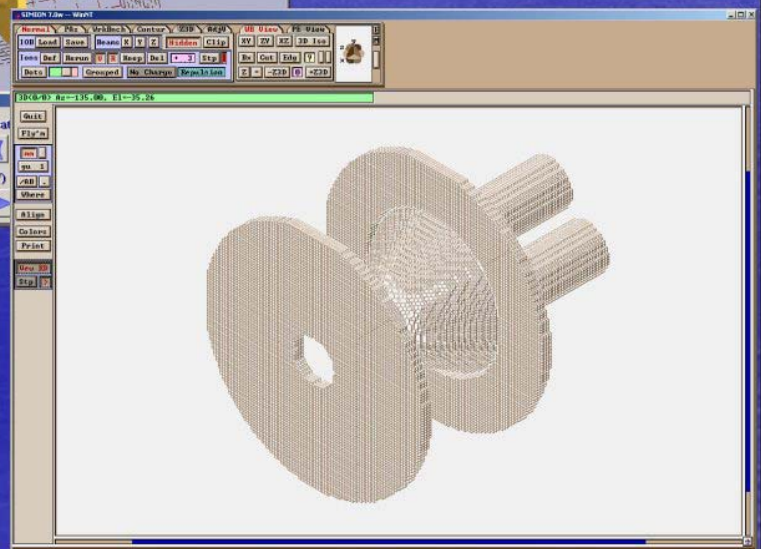
CAD program gives possibility to create geometrical object with axial symmetry where electrode profile can be loaded from txt file.

Some profiles of electrodes with axial symmetry are results of numerical simulations. Those profiles can be stored in txt files and easily incorporated in to SIMION by
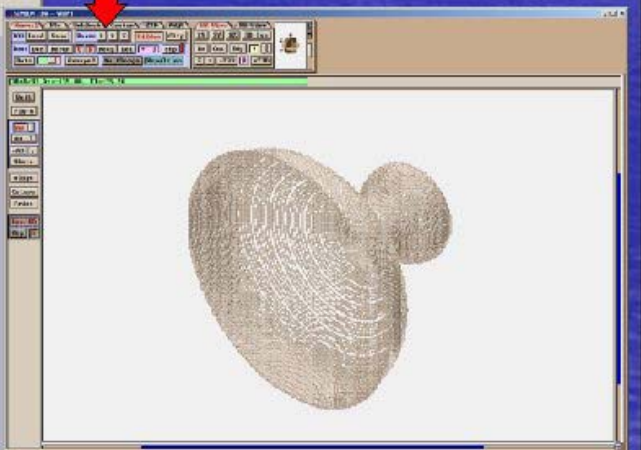
Virtual Device.

| 0 | 50 | 50 | 25 |
80	50	50	50
100	50	50	35
120	50	50	15
150	50	50	5

CAD program gives possibility to create geometrical objects with axial symmetry where electrode profile can be expressed by analytical formulas.

Scientific calculator option allows calculation of functions whose graphs may be used as profiles of 3D objects with axial symmetry. This gives a user a very powerful tool to develop complicated ion optics schemes.
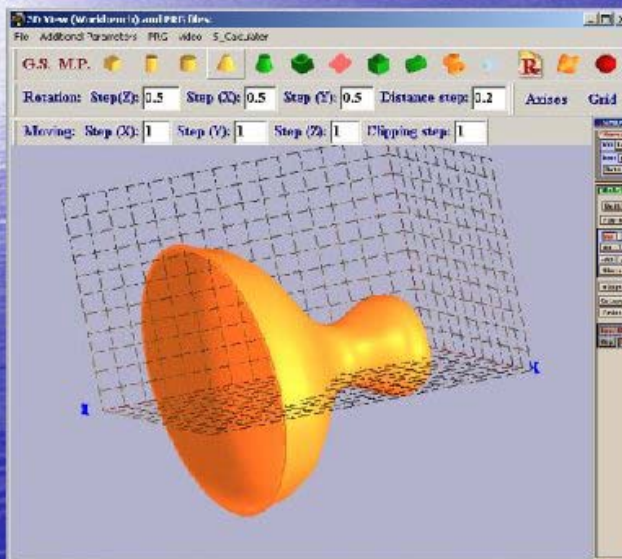
Virtual Device allows loading results of SIMION's simulation and carrying on two-event analysis, where the first event is ion's birth, and the second is event of ion's death.

It gives a powerful tool for quick typical investigation in ion optics.

Virtual Device provides one of important routine investigation methods - phase space analysis.

Virtual Device provides different types of analysis of simulation results:

1. Creation of histograms (restoring of spectrum from SIMION data).
2. Calculation of resolution and resolving power.
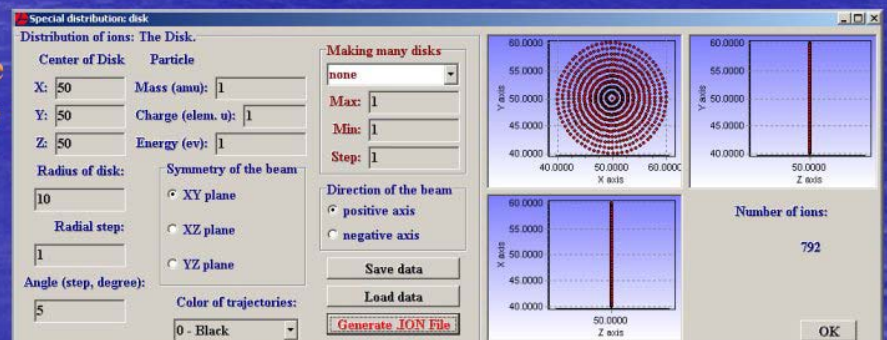3. Estimation of ion mobility and so on.
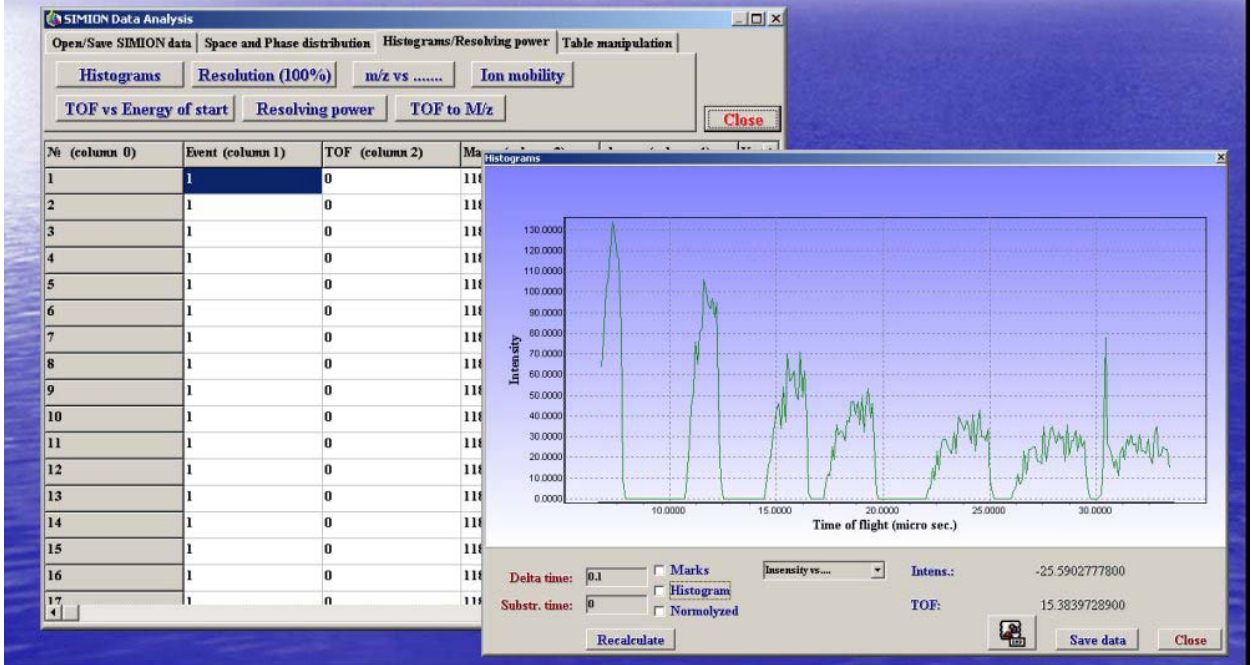
Virtual Device allows quick creation of initial ion distribution for SIMION
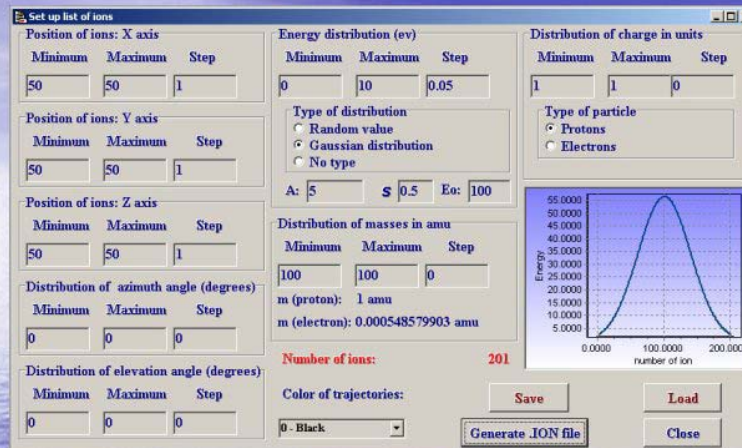
It enables creation initial ion distribution with several types of energy distributions (e.g. Gauss distribution).

By using this feature user is able to create extended sources of ions with multiple initial parameters.

The essential part of Virtual Device is model of ion movement in gas.

This model allows simulating ion movement in gas under influence of electrical field in SIMION.

It includes: 1. A very detailed description of mathematical and physical models. 2. Tests and comparison of models with experimental results and with a theoretical approach. 3. PRG file with a model of collision.

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Welcome to advanced scientific software