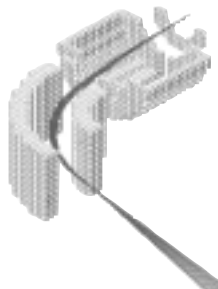




The Industry Software Standard for Electron and Ion Optics Modeling

SIMION is a software package whose main purpose is to solve for electric fields and the trajectories of charged particles through those fields when given some configuration of electrodes with voltages and particle initial conditions. Quasistatic RF (e.g. quadrupole) and magnetic fields are also supported. In this, SIMION provides extensive supporting functionality in geometry definition, user programming, data recording, visualization, and workbenches. It is a general and time-tested platform for simulating lens, mass spec, and other types of particle optics systems.



www.simion.com

Applications

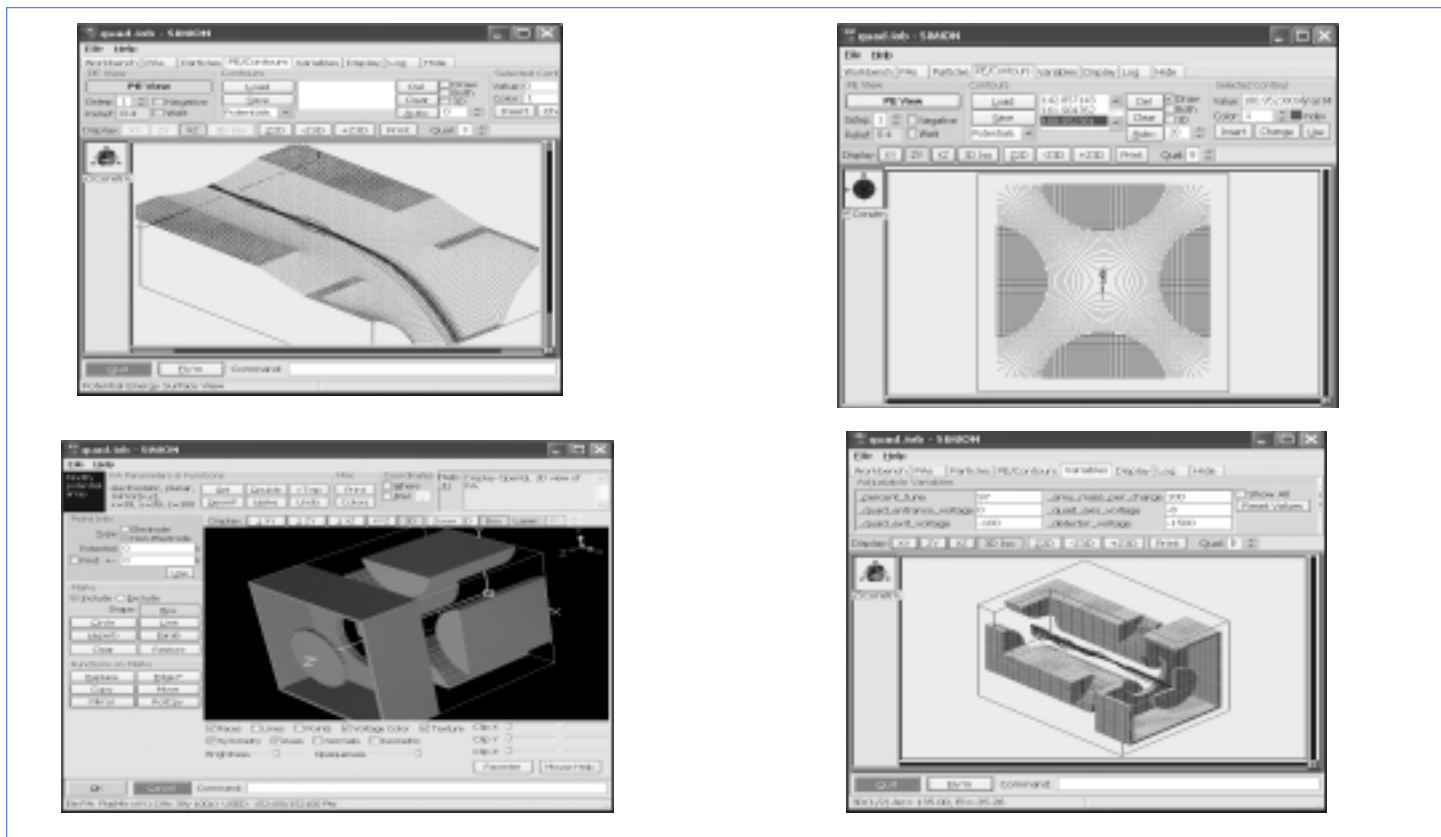
SIMION is suitable for a wide variety of systems involving 2D and 3D, static low-frequency (MHz) RF fields: from ion flight through simple electrostatic and magnetic lenses to particle guns to highly complex instruments, including time-of-flight, ion traps, quadrupoles, ICR cells, and other MS, ion source and detector optics.

Audience

No program can be all things to all people. SIMION is aimed at a wide audience, with extensive use in both academia and industry, including by most of the major mass spec companies. SIMION is positioned as an affordable package that nevertheless provides solid implementations of many core capabilities, even a choice among multiple approaches (as when defining geometries). The program uses direct methods such as finite-difference that are straightforward to apply but are also optimized and extended, making SIMION suitable for a wide variety of real-world systems. The methods are interactive to promote understanding, allowing you to adjust parameters during the simulation and immediately visualize the resultant fields and trajectories. The software is programmable, allowing users to extend and automate the capabilities in novel ways. It is also substantially documented. It runs on Windows and Linux.

History

SIMION has a long history with the first PC versions starting in the early 1980's and developed for the next two decades up to Version 7.0 under David Dahl at Idaho National Laboratory (US Department of Energy). SIS has purchased the development rights to SIMION and is continuing to improve SIMION with our first release of SIMION 8.0.



Screenshots above show model, field, and trajectory views of an RF quadrupole example in SIMION 8.