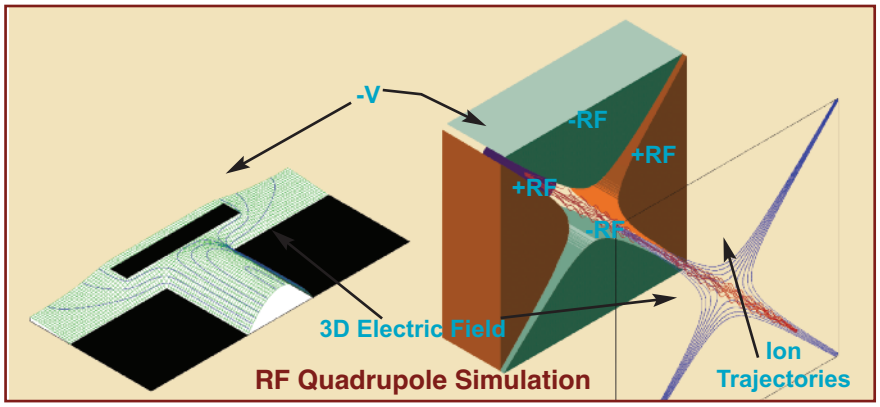
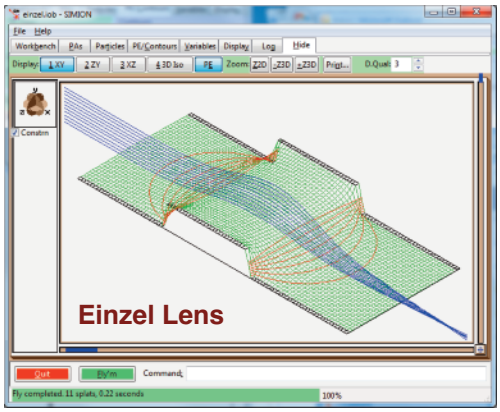
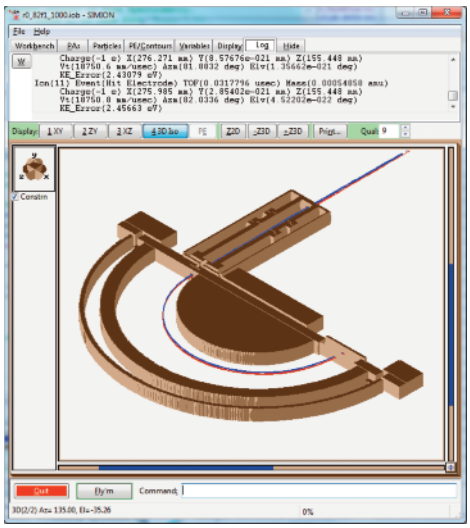
SIMION® 8.1.2 New Release

The industry standard for charge particle optics simulation.

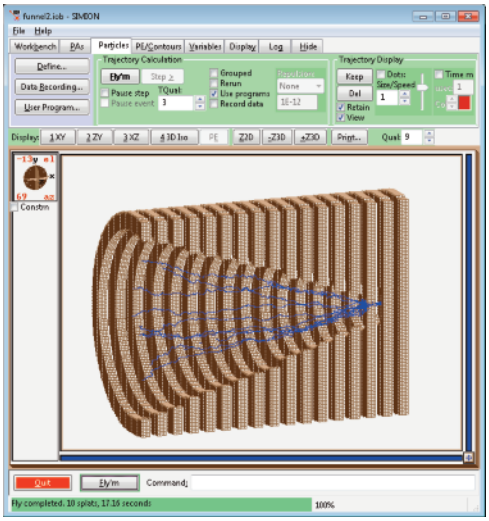
- Design and improve instruments, mass spectrometers and other ion optics lens systems.
- Calculate electric and magnetic fields from 2D & 3D models, static or RF (quasistatic)
- Calculate charged particle trajectories.
- Visualize, optimize, and analyze results.
- Extensible user programming for crazy flexibility.
- Free basic tech support–phone/e-mail/forum.
- Widely used for 35 years both commercially and in academia, including by most MS manufacturers.







Hemispherical Analyzer with Lens Optics



RF Ion Funnel/Collisions

Part No.	Description
SIMION81	SIMION 8.1
SIMION81LK	SIMION 8.1 Lab Kit - For Universities Use Only - Up to 30 seats
SIMION81U	SIMION 8.1 Upgrade from SIMION 8.0
SIMION81U7	SIMION 8.1 Upgrade from SIMION 7.0
SIMION81AL	SIMION 8.1 Academic Lease (1 year)

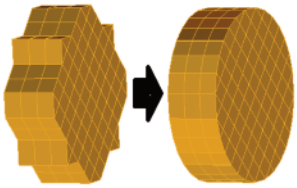
Free 8.1.x updates included with 8.1 purchase

Scientific Instrument Services, Inc.
1027 Old York Rd, Ringoes, NJ 08551-1039
Phone: 908-788-5550 FAX: 908-806-6631 Web: http://www.simion.com

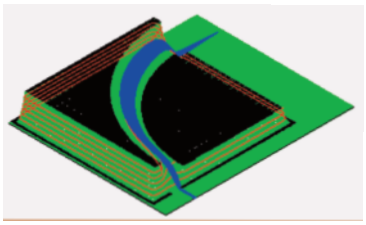
New Features in SIMION 8.1.2 (and 8.2EA/beta)

Now faster, more accurate, and more versatile.

More Accurate

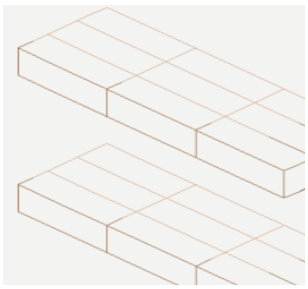


Improved curved surface handling ("surface enhancement") gives order of magnitude accuracy improvement

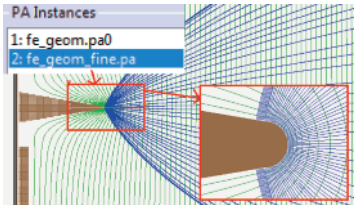


Large 64-bit array sizes up to 20 billion points / 190 GB

Example: 56 GB PA running in Amazon EC2

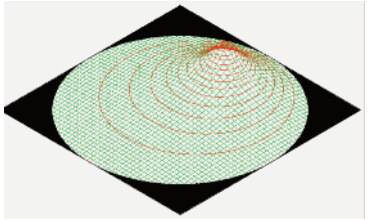


Oblong, non-square grid cells.



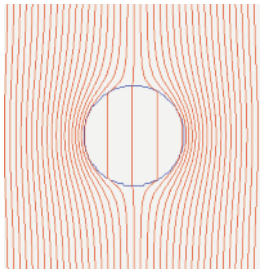
Nested refining techniques

More Versatile



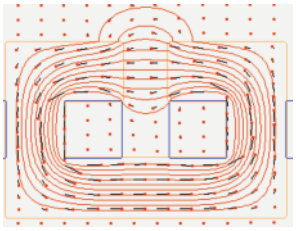
Poisson solver (Refine), fully programmable

Example: charged sphere in grounded tube

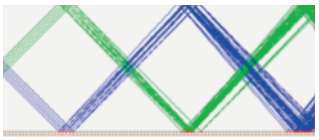


Dielectric materials (Refine)

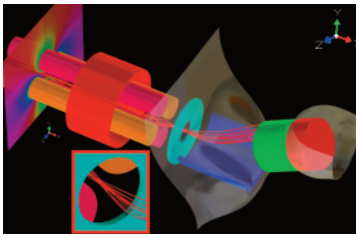
Example: dielectric sphere in E-field



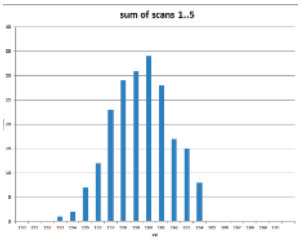
Permeability and magnetic vector potential (Refine) [8.2EA]
Example: C-magnet



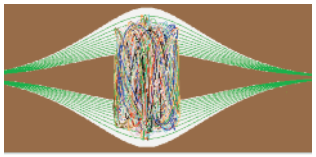
Particle creation API (8.2EA)
add_particles {mass=m,charge=q,...}



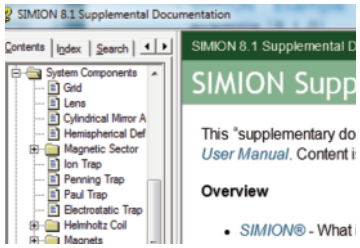
High quality 3D (OpenGL) graphics on View screen [8.2EA]
Programmable plotting capabilities for B-fields, gas flow, and wire coils.



Integration with Lua/C, Excel, gnuplot, Origin, VirtualDevice , MATLAB® (8.2EA), Fluent/COMSOL (8.2EA), Poisson Superfish (8.2EA), QuickField™ (8.2EA), and other programs.

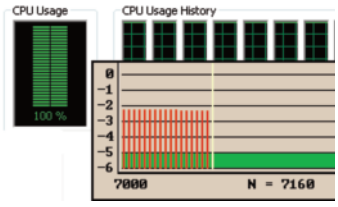


More examples



Supplemental Documentation expanded

Platforms and Performance

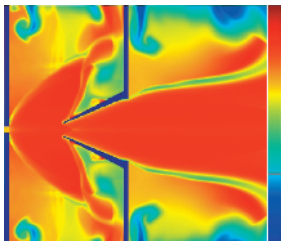


Multicore Refines (8.1)
Multicore Fly'm (8.2EA)
Native Linux batch mode binary (8.2EA)
Additional parallelization [8.2EA]

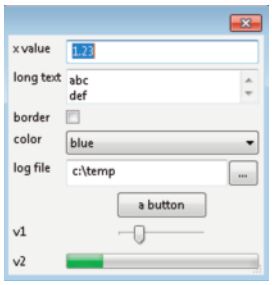
```
function segment.flym()
  -- Step combinations of voltages A and
  for VA = 10,100,10 do
  for VB = 50,70,5 do
    _VA,_VB = VA,VB
    run()   -- Perform trajectory calcula
  end end
end
function segment.terminate_run()
  print('transmission ratio=', count/tot
end

simion.pas[1]:potential(x,y,z, 200)
simion.pas[1]:refine{convergence=1e-5}
simion.wb.instances[1].x = 10
simion.wb:efield(x,y,z)
```

New API's and new programming segments for run automation (initialize_run, terminate_run, flym) [8.1.1], updating and refining geometries within the View screen, manipulating the model from Lua, and more.
Example: voltage/geometry optimization



Third-party add-on package:
Virtual Device Hydrodynamics 21.2
Gas flow solver for supersonic compressible conditions.



New GUI dialog library (8.2EA)

Early Access

Trial versions of features being developed for the next major version (8.2EA) can be previewed by 8.1 users via the "Check for Updates" button