VSim 11.0

“With every release we strive to incorporate features that simplify workflow, respond to emerging technology needs, and build tutorials and examples for the complex problems being studied, I’m thrilled to say that with this release, we have exceeded all three of those goals.”

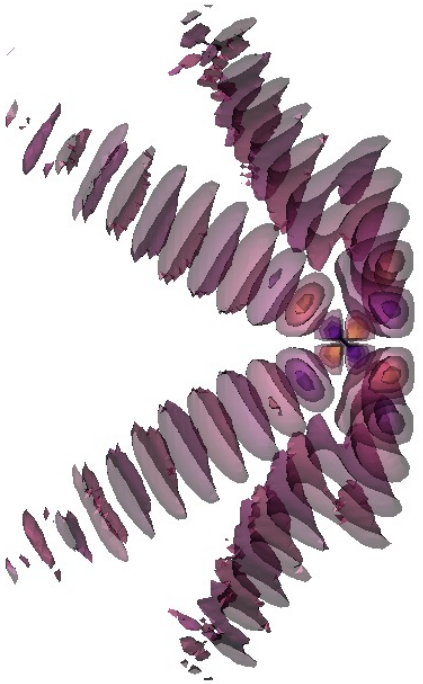
John Cary, CEO of Tech-X Corporation

Tech-X
SIMULATIONS EMPOWERING INNOVATION

New Capabilities • Improved Functionalities • Enhanced User Experience

VSim 11.0

Built on the powerful Vorpal physics engine that has been used by researchers and engineers for 20 years, VSim 11.0 is faster, more accurate, and includes an enhanced GUI that ***emphasizes the user experience****.*

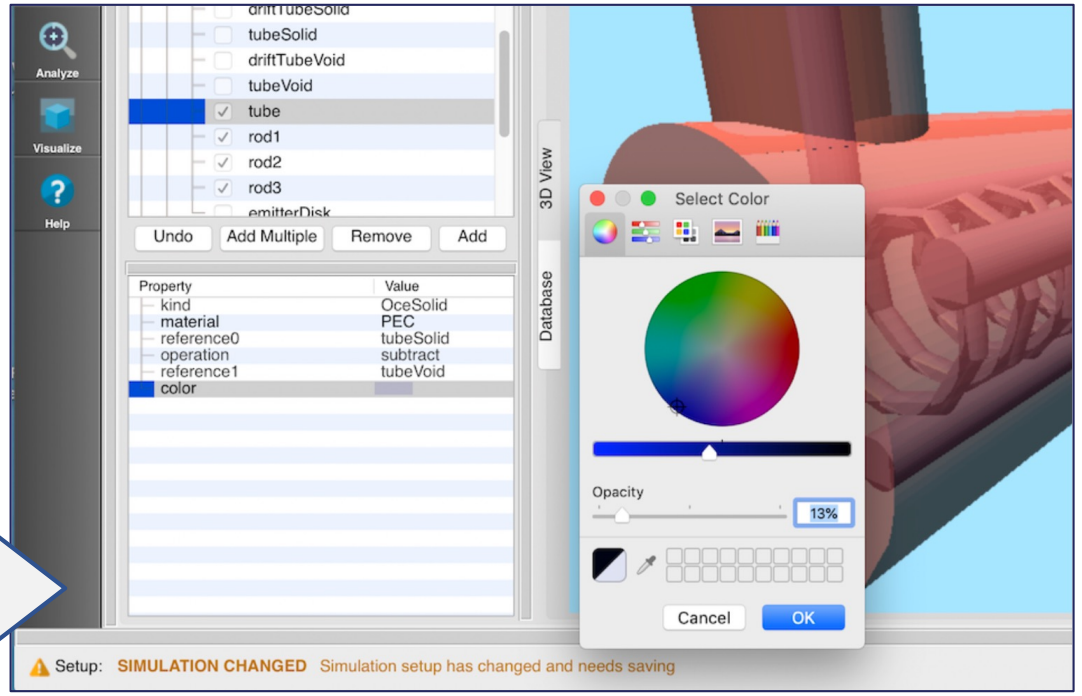


User Interface - *Intuitive and Enhanced*

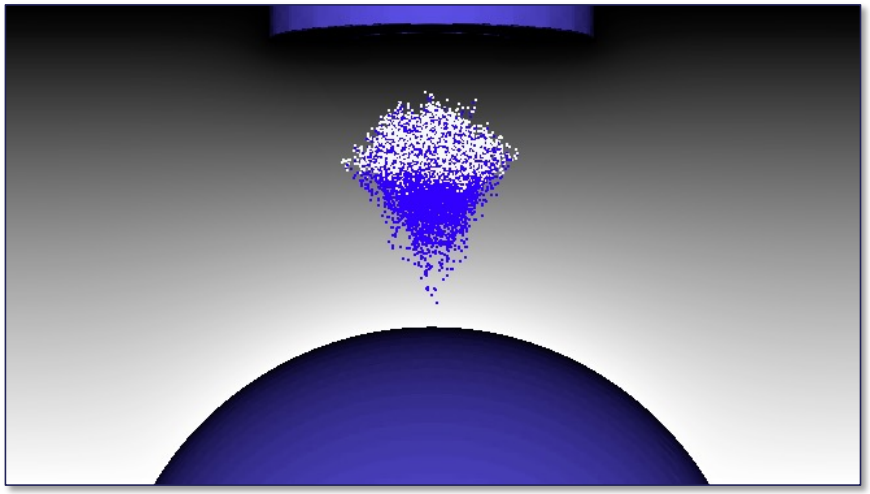
VSim 11.0 features a modern and ***user-friendly interface*** *with* ***complete CAD importability***

Enhanced manipulation of imported CAD shapes and user created geometries, including:

- **Splitting**
- **Copying**
- **Shape Healing**
- **Boolean Operations**



Vorpal Computational Engine - *New Solver for Electrostatics*



New

Cut-Cell Poisson Solver

- More Accurate (Nearly 2nd Order!)
- Faster
- Users can now assign unique dielectric constants to different components of imported CAD geometries or user-generated primitives

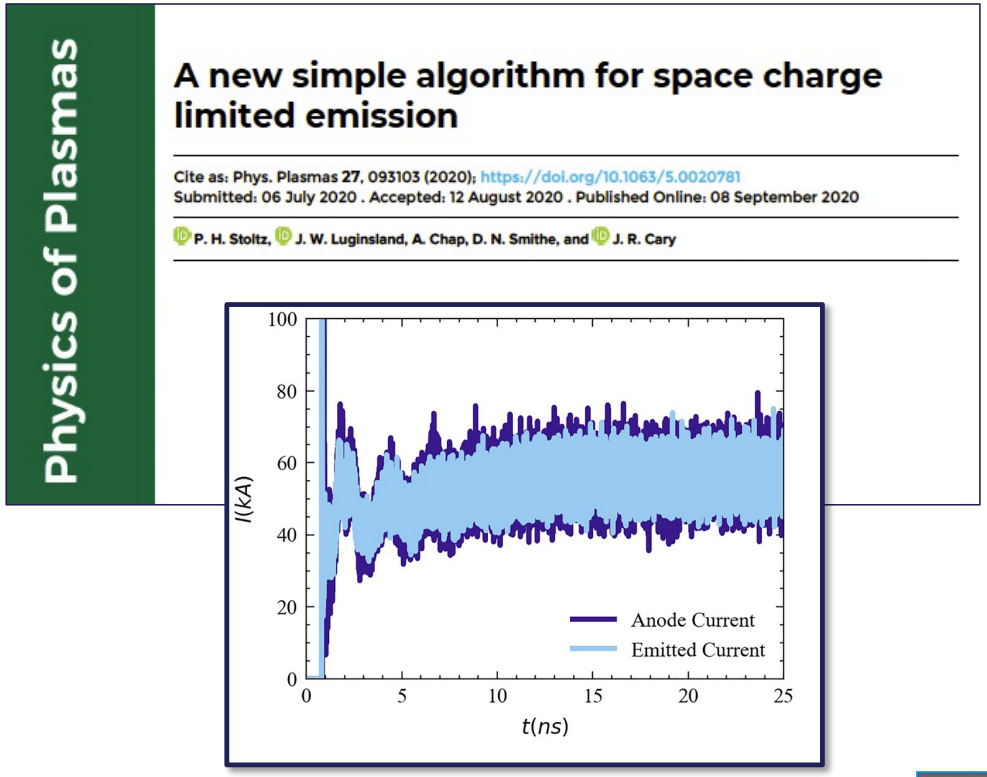
Vorpal Computational Engine - *Improved Algorithm for MD*

New

Space Charge Limited Emission

Works for Conformal Shapes

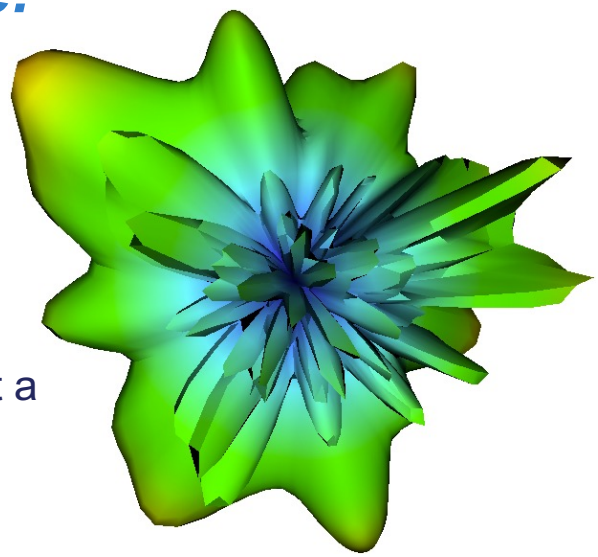
- Benchmarked
- Robust algorithm handles complicated cases such as secondary electron emission
- Accurately captures time-dependent voltage effects



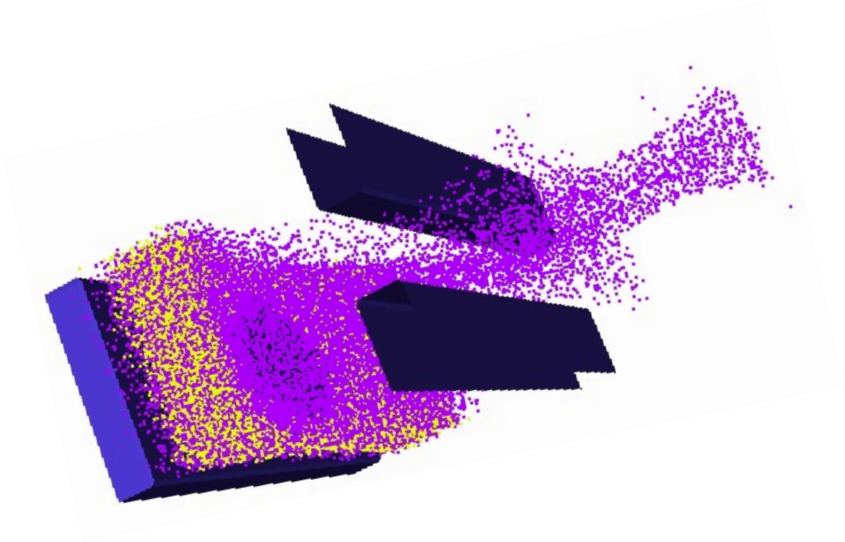
Analyzers - *New Additions*

VSim 11.0 now includes analyzers to compute:

- Far-field radiation patterns using Kirchhoff integration over a Cartesian box *2nd Order Accuracy!*
- Thrust due to particles absorbed at a boundary
- Modes of waveguides
- Antenna gain and phase information
- Angular Energy Distribution (AED) for particles absorbed at a boundary
- Particle kinetic energy as a history



Licensing - *More Options*



- **Floating licenses**
- License server capability (eliminates the need to gather MAC addresses)
- Private cloud licenses

General Updates

New

- Documentation now opens in browser of choice
- Dark Mode
- Ability to invoke simulation runs through schedulers
- Run panel specifies variables
- More color options for visualization

Improved

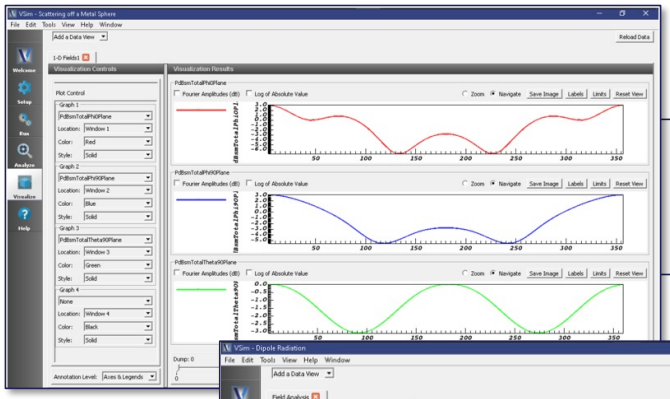
- Displays for high DPI Screens
- Output between solvers
- Naming for log histories
- Persistence across close and open visualization, runs and analyzer
- Handling of data dumping when particles are not present

VSim 11.0

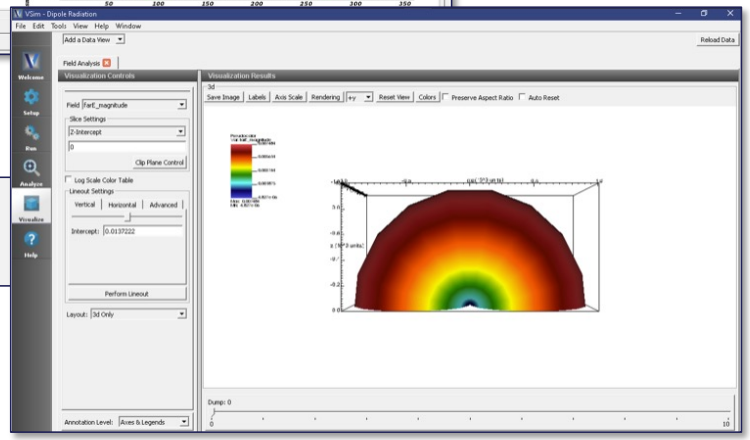
SIMULATIONS EMPOWERING INNOVATION

Tech-X

New Examples - *Electromagnetics*

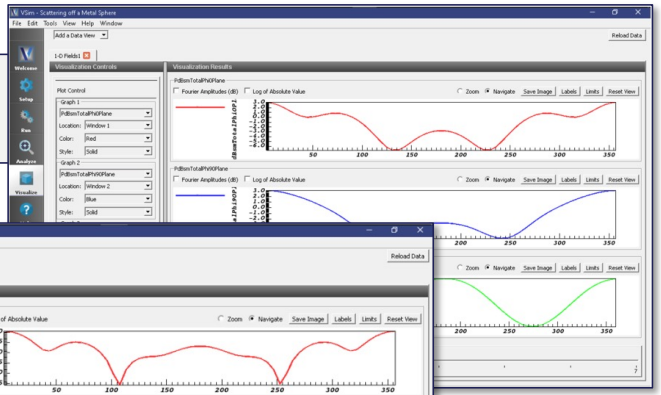


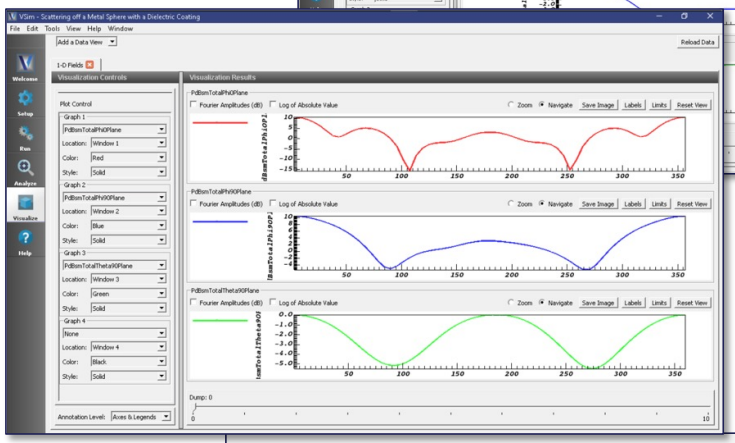
Microring Resonator- *Gaussian Mode*



Dipole Radiation

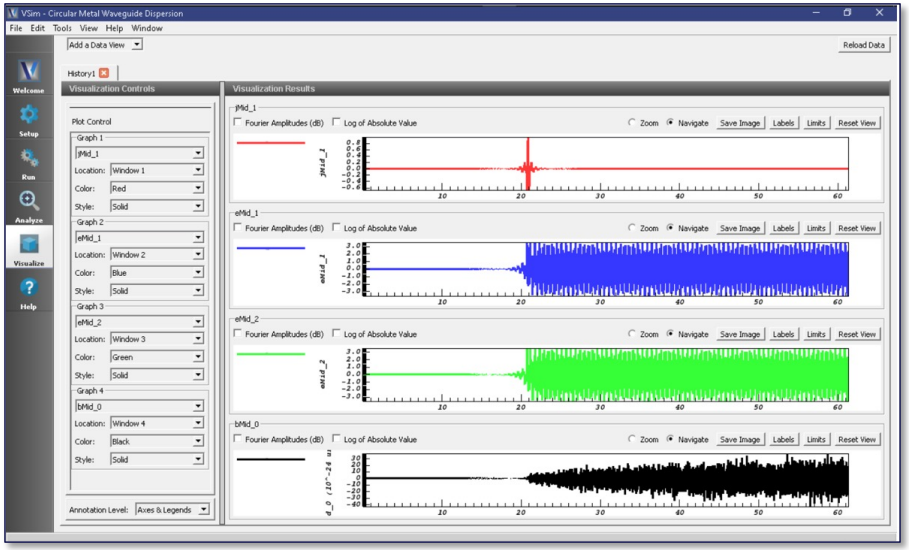
Scattering off a Metal Sphere



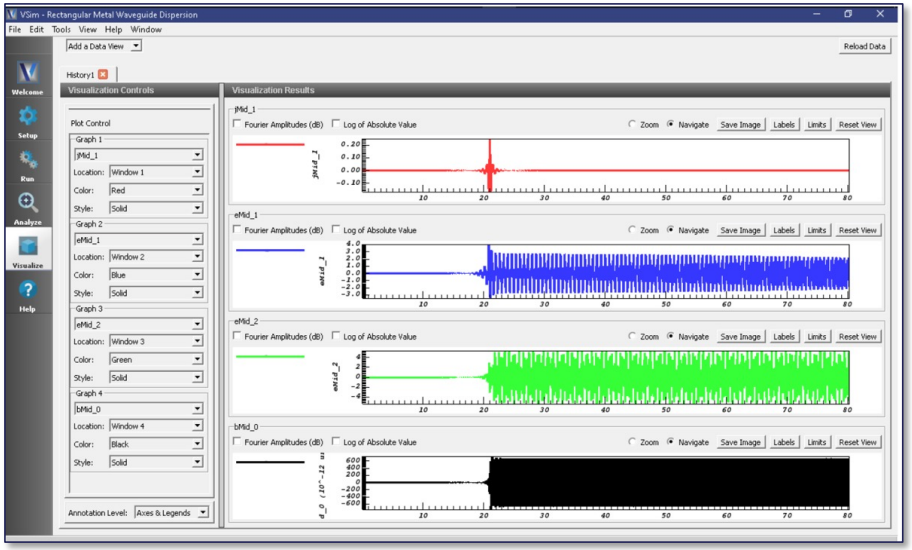


Scattering off a Metal Sphere with a Dielectric Coating

New Examples - *Microwave Devices*

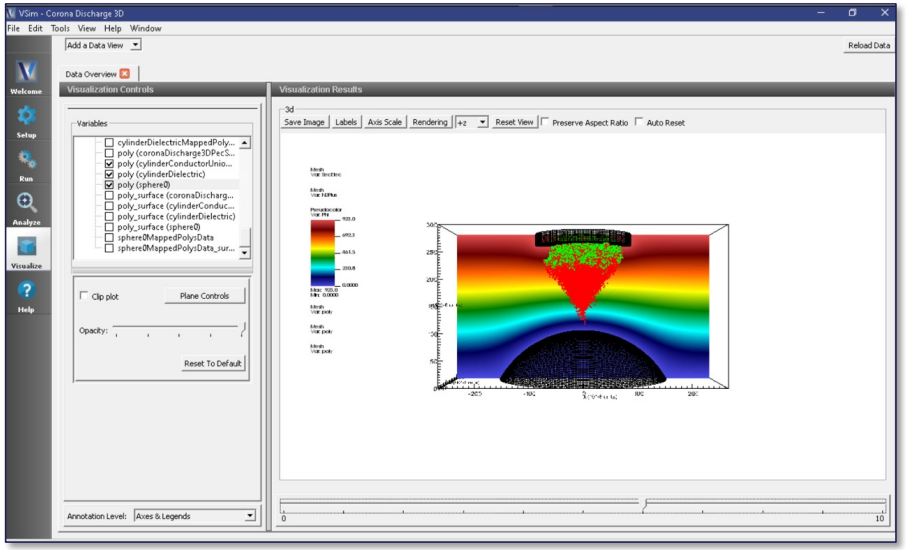


Circular Metal Waveguide Dispersion

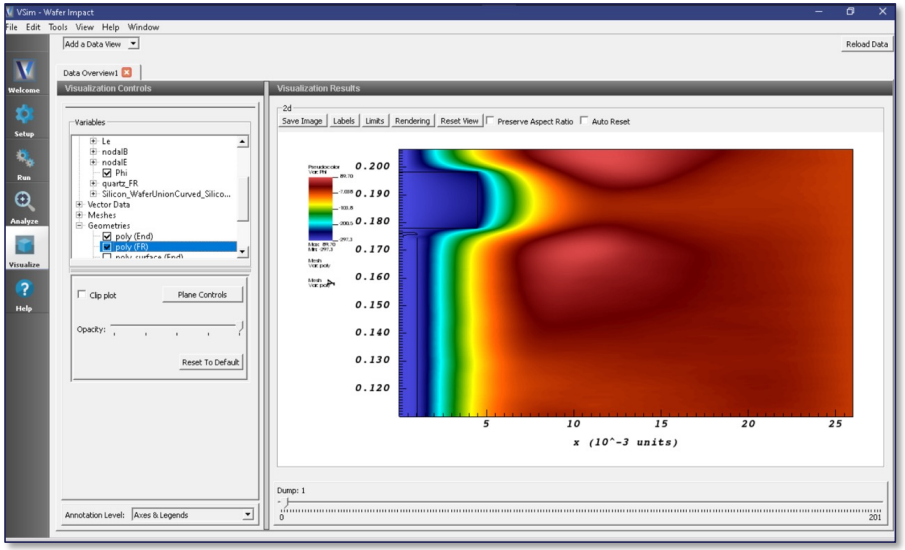


Rectangular Metal Waveguide Dispersion

New Examples - *Plasma Discharges*



Corona Discharge in 3D



Wafer Etching with Plasma