


Advanced Radiation Analysis Calculation Tool For Space Systems

3D Model Import & Design

Easy .Step file import

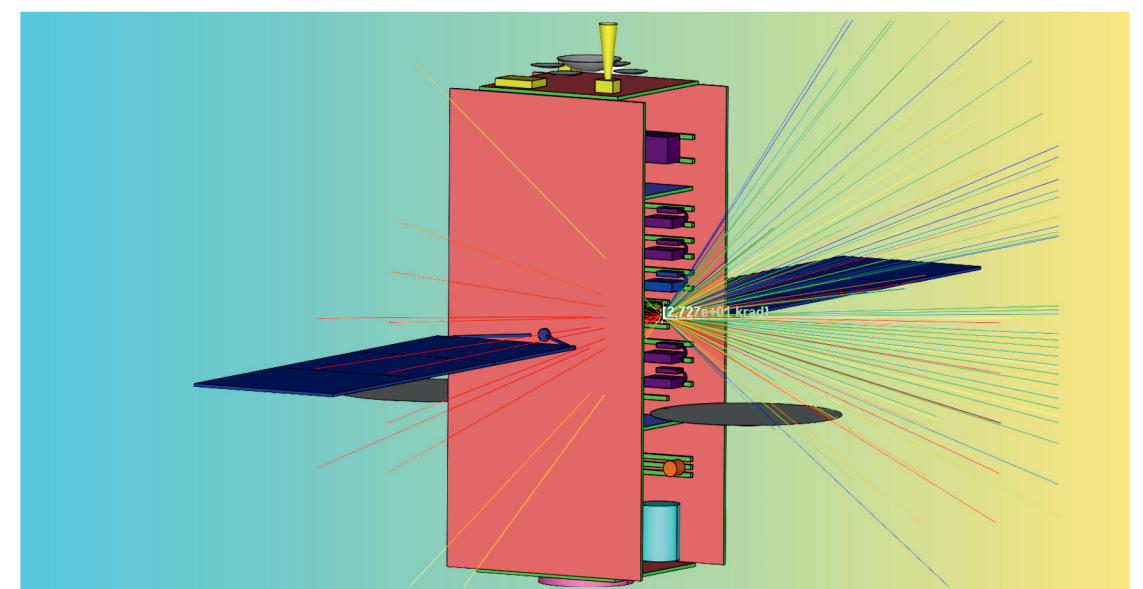
 Particle transport with Forward and Reverse Monte Carlo methods

 Sector analysis module **for radiation dose calculation/Six faces equivalent thickness tool**

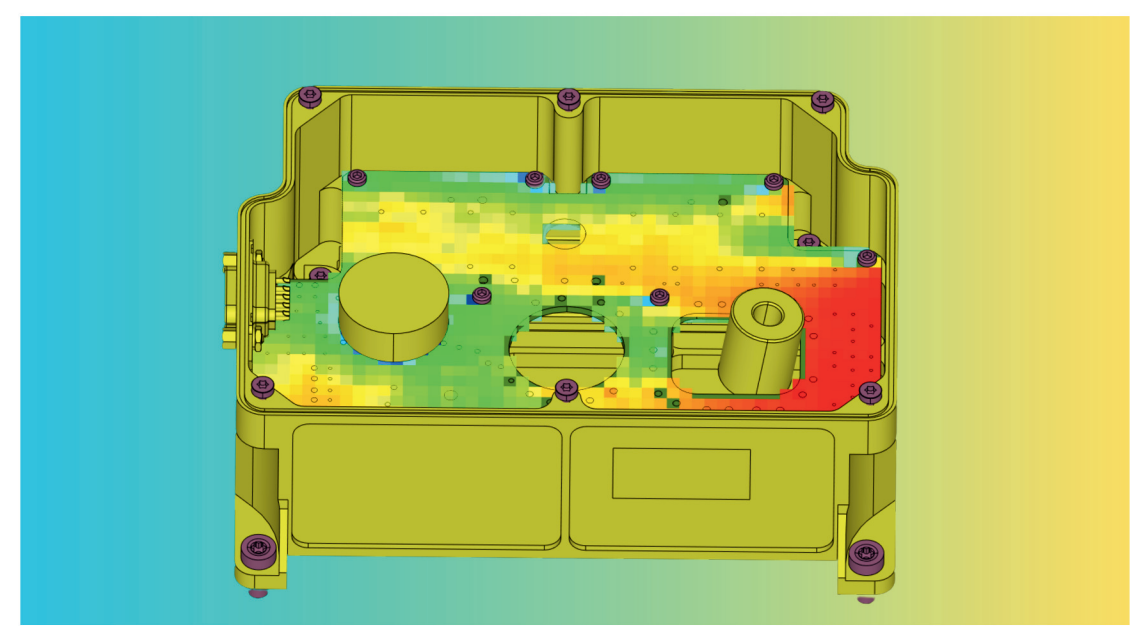
Internal charging analysis (option)

- 3D time-dependent **electric field**
- Charge deposition rate by primaries and secondaries
- Charging of **floating conductors**
- Incident current density
- Net electron current density between two points

 Integration of a **scripting module** for interacting with the main FASTRAD[®] entities

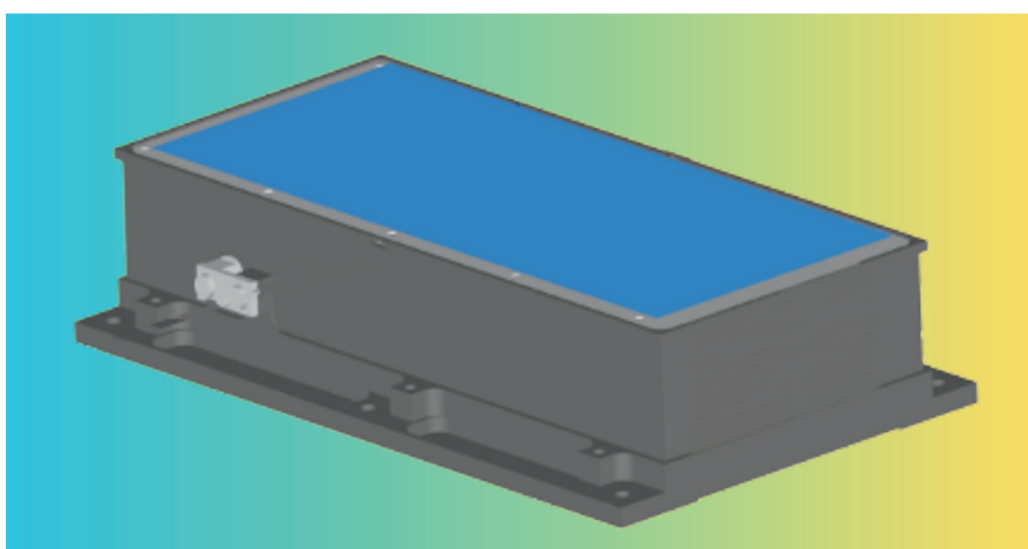


Graphical user interface



Dose mapping with Ray-tracing calculation

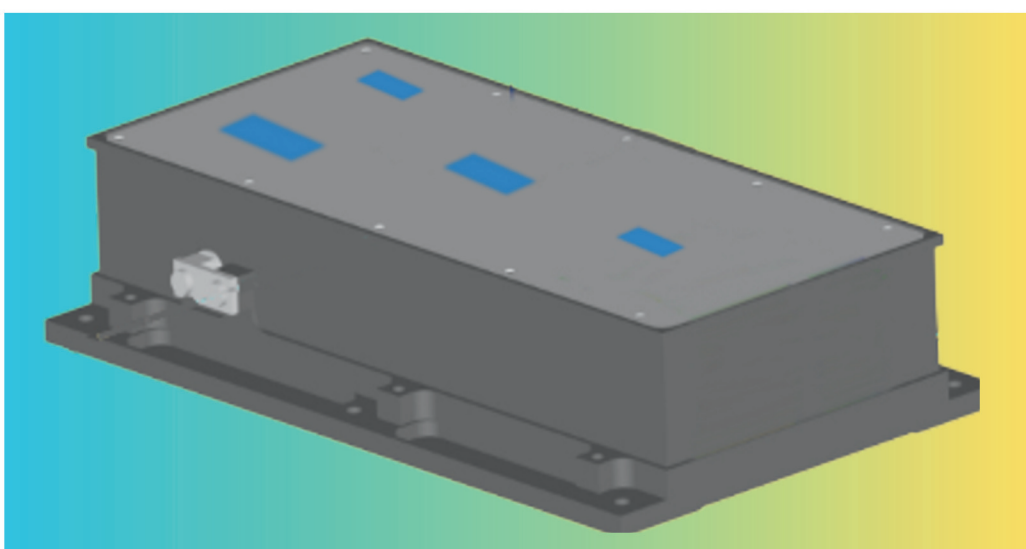
WITHOUT FASTRAD[®]



Uniform & unrefined shielding
Total mass of 360g



WITH FASTRAD[®]



Spot shielding on critical parts
Total mass of 12g

YOUR BENEFITS

Cost reduction by:

- Decreasing overall shielding mass
- Improving radiation sensitive equipment reliability

 Great time saving tool for 3D modeling

 Precision of Monte Carlo method

 Powerful decision-support tool

 User-friendly & customized interface, easy handling

SAVE TIME ON YOUR PROJECTS!

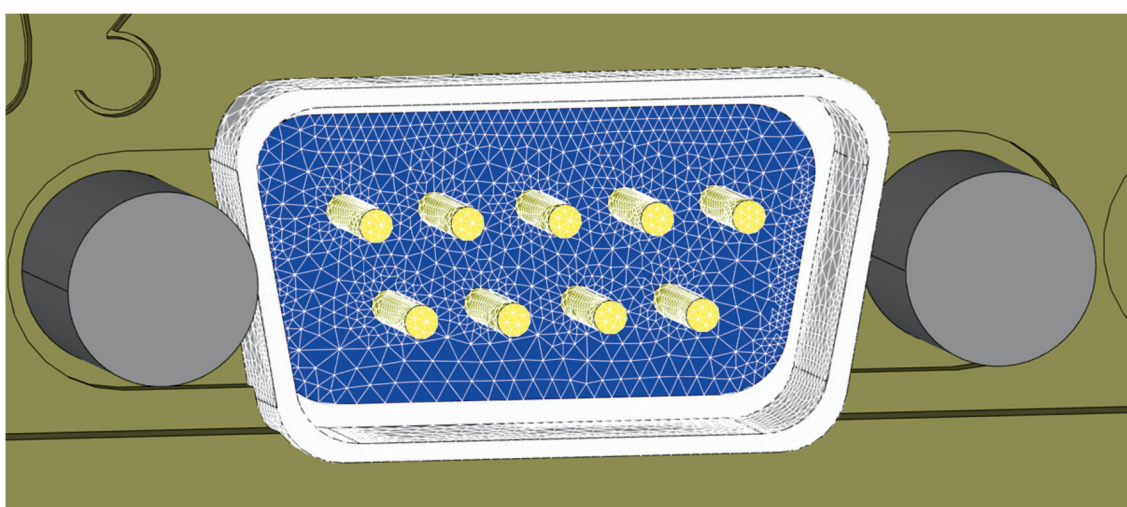
**Leading radiation software for more
than 20 years!**

Used daily by 150+ clients worldwide

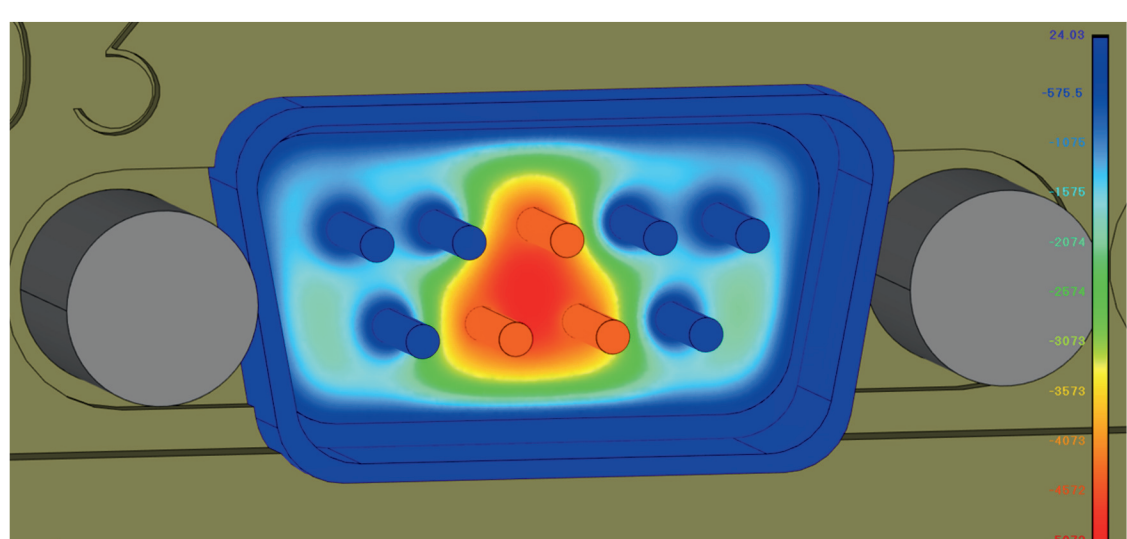
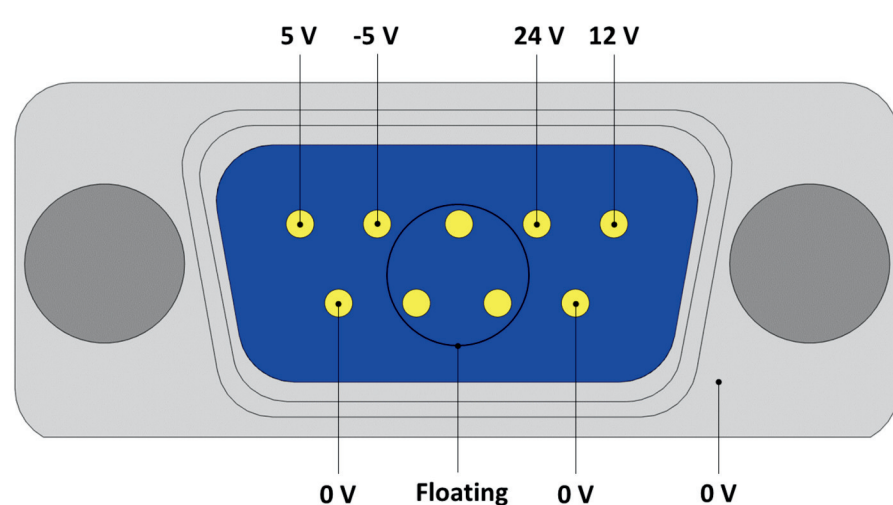
Internal Charging Analysis - 3D Time-Dependent Electric Field (option)

ESD risk assessment through 3D and time-dependent **mapping**

Mesh tool: create, display and refine a tetrahedral volume mesh

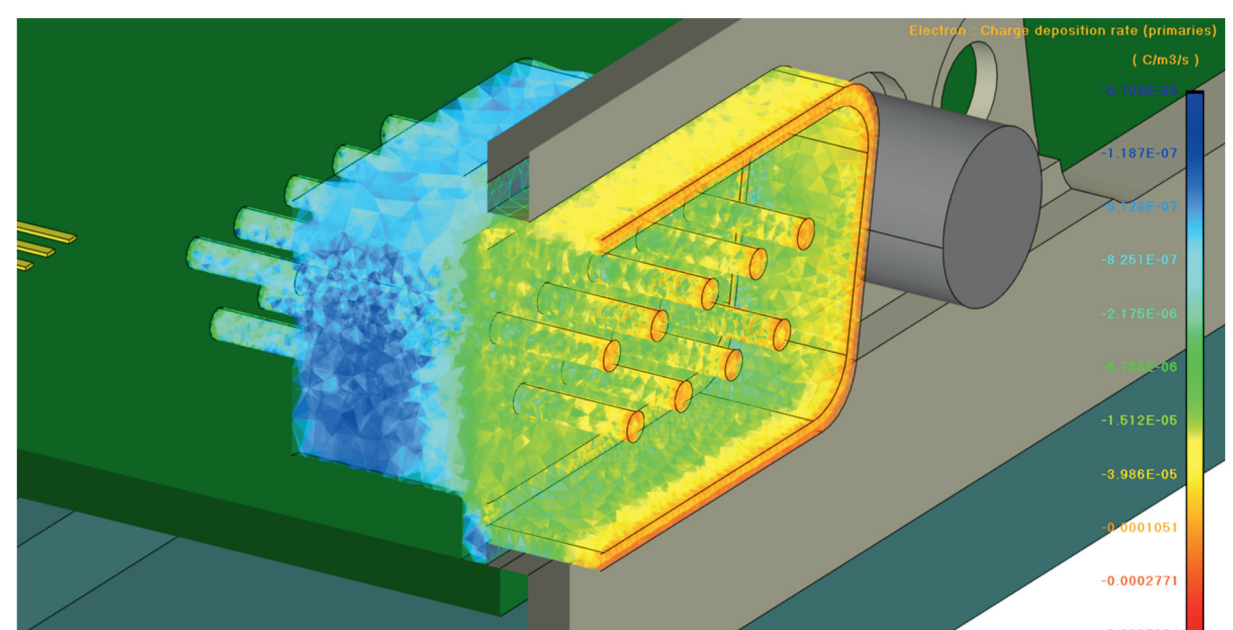


Tetrahedral mesh



Potential

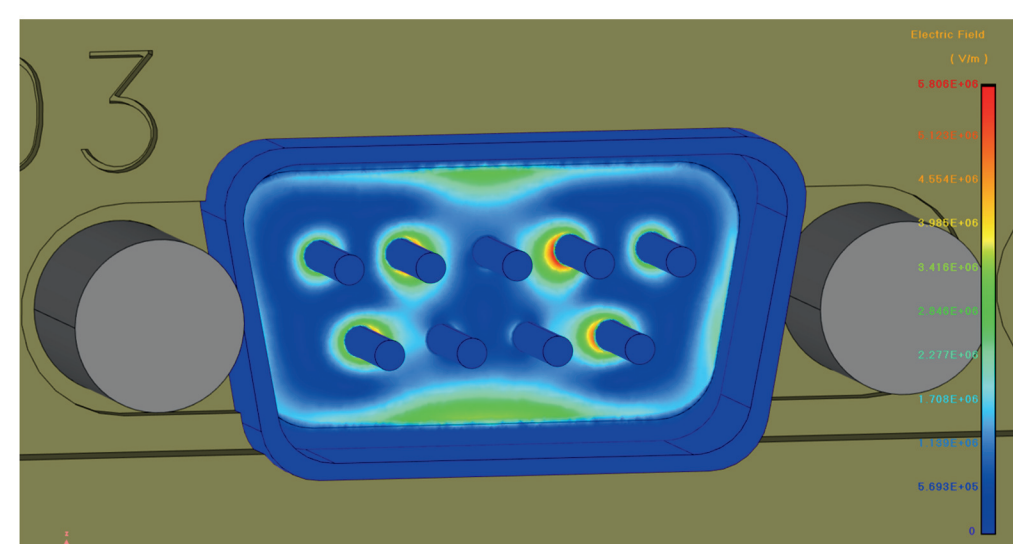
The charge deposition rate calculated by a Reverse or Forward Monte Carlo particle transport is the source term for the calculation of the electric field



Charge deposition rate

Boundary conditions: assign potential on the different elements

Several conductivity models are available:
radiation-induced conductivity, temperature and electric field dependent conductivity, constant conductivity, user defined electric field-induced conductivity



Electric field

YOUR BENEFITS

- Reduce margins by computing the 3D electric field
- Single intuitive tool for all radiation analysis
- No additional modeling effort: use the same geometry model as the dose analysis
- Use real geometry with Reverse Monte Carlo and tetrahedral mesh
- Geometry/shielding/design optimization to limit ESD risk
- Time and money saved on space projects