

FASTRAD® 3D modeling software for radiation shielding analysis

Advanced Radiation Analysis Calculation Tool For Space Applications

- **3D Model Import & Design** Easy .Step file import
- Particle transport with **Forward** and **Reverse** Monte Carlo methods for both dose and charging
- Sector analysis module for radiation dose calculation/Six faces equivalent thickness tool
- Internal charging analysis
 - Net electron current density between two points
 - Incident electron current density
 - Charge deposition rate
 - 3D time-dependant electric field (option)
- Integration of a **scripting module** for interacting with the main FASTRAD[®] entities



Graphical user interface



Display of the smallest shielding thicknesses

WITHOUT FASTRAD[®]



Uniform & unrefined shielding Total mass of 360g





Spot shielding on critical parts **Total mass of 12g**

atao

YOUR BENEFITS

• <u>Cost reduction by</u>:

- 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 18 years Used daily by 150+ clients worldwide







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

- Time-dependant calculation of potential and **electric field in 3D** using the finite element method
- ESD risk assessment though 3D and timedependant **mapping**





• Mesh tool: create, display and refine a

• 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



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

YOUR BENEFITS

- 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

CONTACTS

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