
Analysis of Total Mission Dose for Satellite Using 3D Sectoring Analysis

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In the early design phase, dose depth curve can be useful to estimate the mission dose level. As the design getting matured, however, more detailed analysis is necessary due to advanced devices and commercial devices which are generally sensitive to the space radiation. In this paper, sectoring analysis using 3D ray tracing model is performed for a certain equipment box to predict total dose level during the mission. It shows some case study depending on the equipment housing thickness design and detector position. Mission dose depth curve is simulated and is applied to the shielding distribution which is calculated by 3D ray tracing model. Finally, total mission dose level is predicted for each model.