

Preface

Most of the complex aerospace structures may be modeled as hybrid of quadric cylinders (QUACYLs) and quadric surfaces of revolution (QUASORs). Although numerically specified surfaces (NURBS) too are used for modeling of aerospace surfaces, for most practical EM applications, it is sufficient to model them as quadric surface patches and the hybrids thereof for geometric ray tracing. Geometric ray tracing is a priori requirement for analyzing the RF build-up inside these electrically large aerospace bodies. Toward this, ray tracing inside different quadric surfaces such as right circular cylinder, GPOR, GPOR frustum of different shaping parameters have been carried out, and the corresponding ray path are visualized. Finally, ray tracing inside a space module, which is a hybrid of a finite segment of right circular cylinder and a frustum of general paraboloid of revolution (GPOR), is analyzed for practical aerospace applications.

Balamati Choudhury
Rakesh Mohan Jha

Refined Ray Tracing inside Single- and
Double-Curved Concave Surfaces

Choudhury, B.; Jha, R.M.

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