

4. Metallic Cone-Sphere

- **Model :**
The model was created from the analytic expression to create a curve and revolved to create a surface.
The total length is 0.689 m (27.127 inches)
- **Simulation parameters :**
The Monostatic RCS is computed at 2 frequencies : 869 MHz and 9 GHz
For both Vertical and Horizontal polarization
The RCS is plotted in dBm^2 as function of azimuth angle from -180 to 0° . -180 degrees azimuth corresponds to incidence on the tip. The elevation angle is zero.
- **Solver :**
Method of Moment method was used and EFIE equations.
MSCBD solver for 869 MHz case and MLACA for 9 GHz case.
The MLACA solver is more accurate for low level RCS, particularly for 9 GHz conesphere in HH polarization.

	869 MHz	9 GHz
Mesh size	Lambda/40	Lambda/20
Number of unknowns	8 664	227 793
Total time	12 seconds	3h 11min *on a 48 cores server

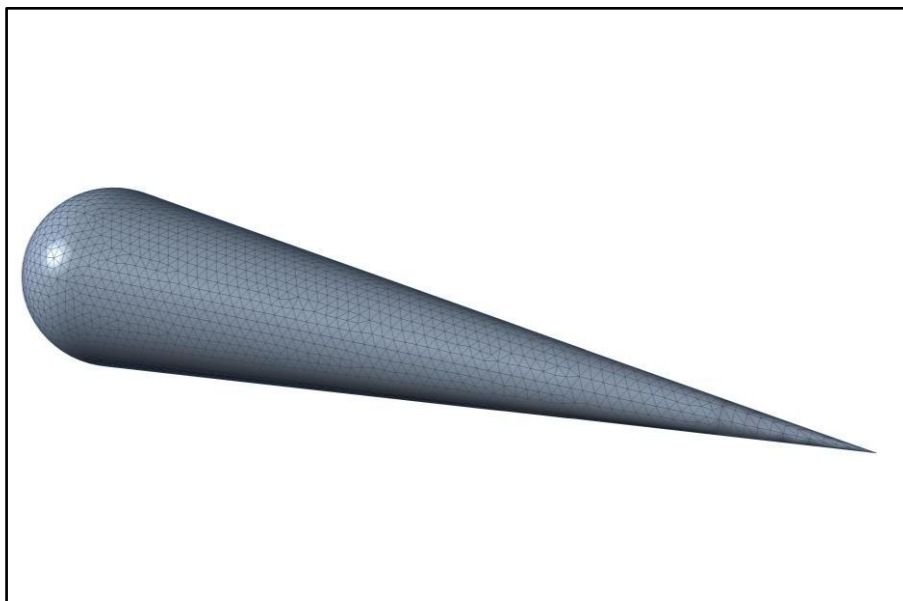


Figure 12 - Cone-Sphere mesh model

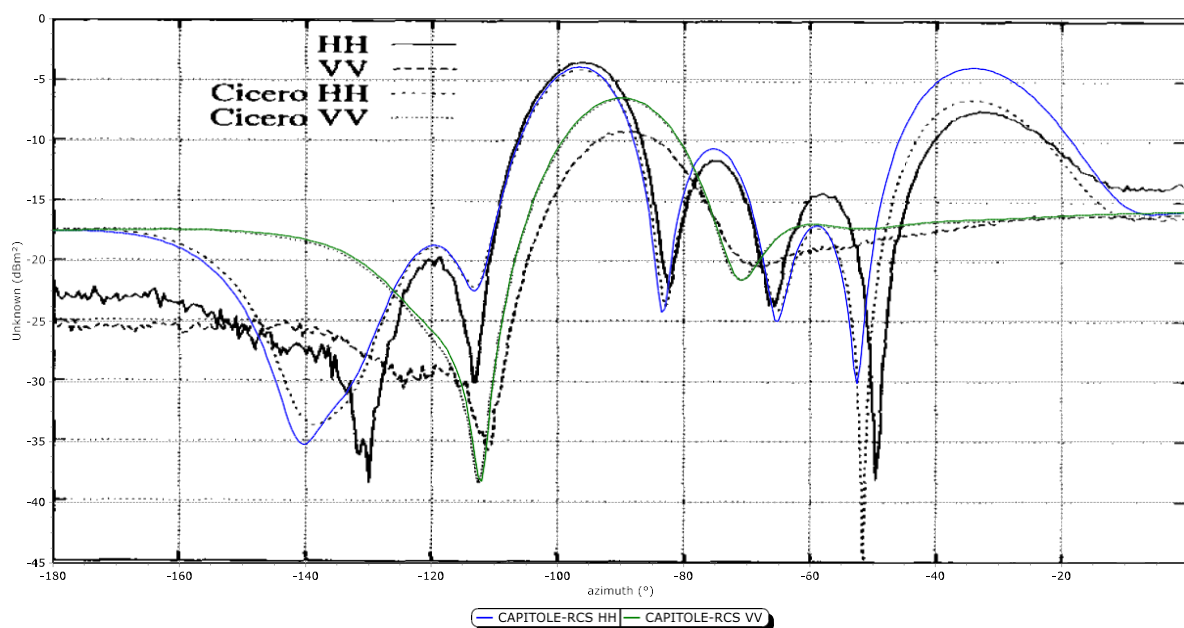


Figure 13 - Metallic Cone-Sphere RCS @869MHz CAPITOLE-RCS vs measurement

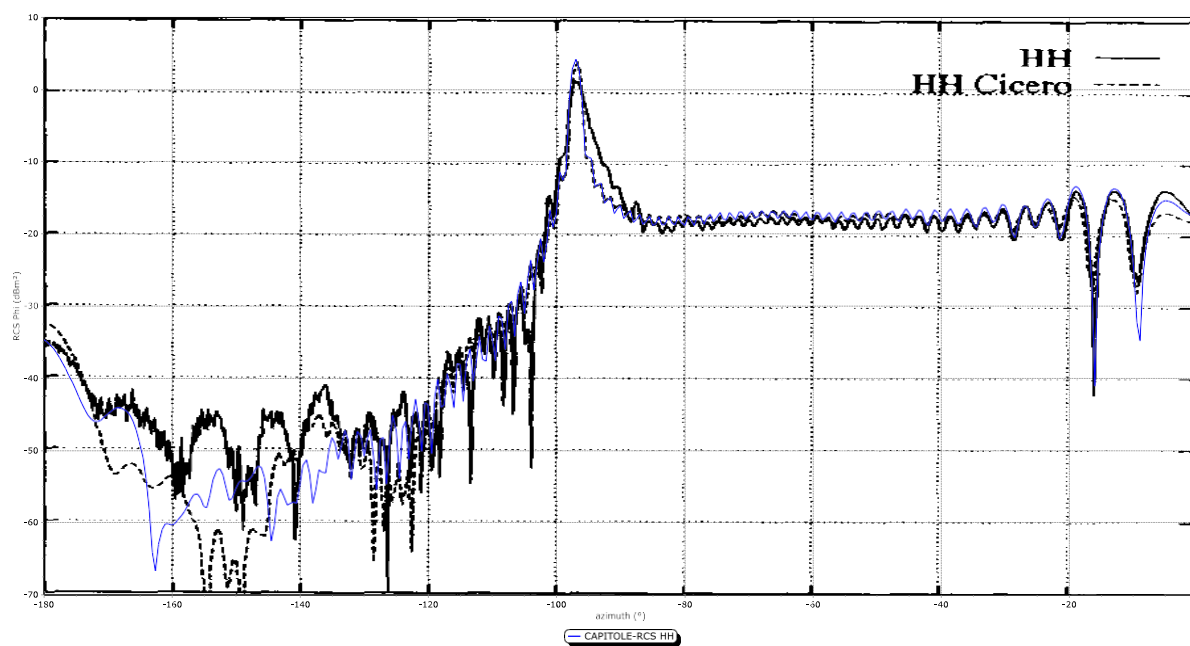


Figure 14 - Metallic Cone-Sphere RCS HH @9GHz CAPITOLE-RCS vs measurement

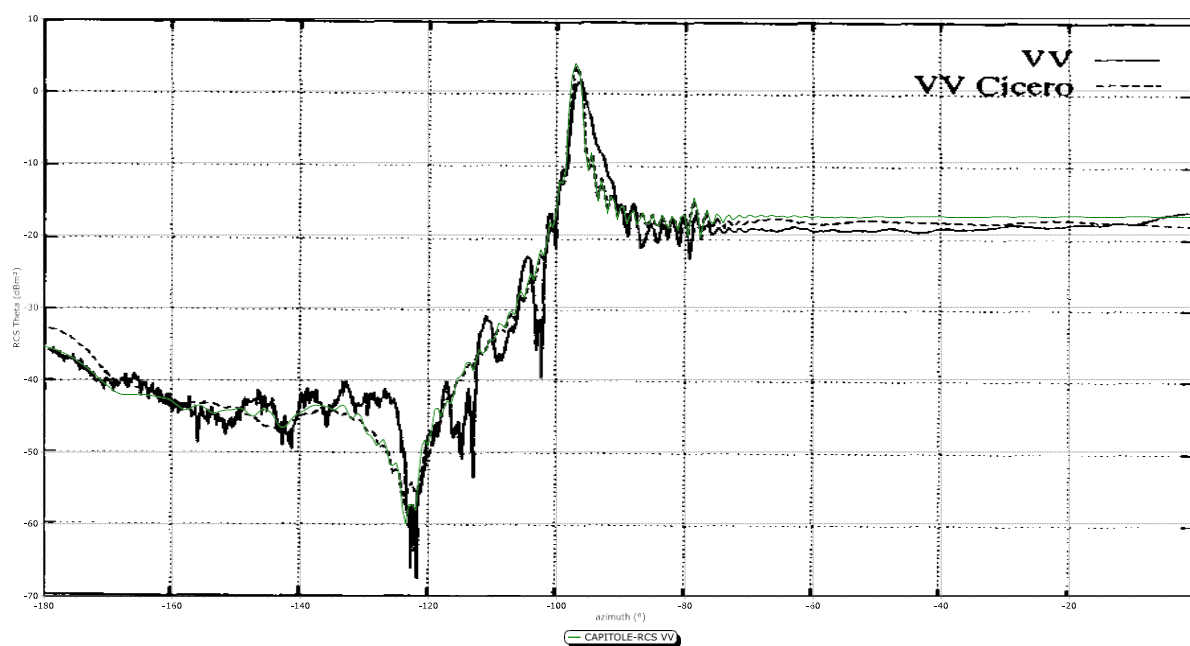


Figure 15 - Metallic Cone-Sphere RCS VV @9GHz CAPITOLE-RCS vs measurement