TEST CASE 4: Bistatic RCS of a NASA almond with wings

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Abstract :

This test case concerns the bistatic RCS simulation of a perfectly conducting NASA almond with wings. The RCS is calculated for two incident angles and two observation sweeps. The frequency of the simulation is 8 GHz.

1 – ***Definition of the geometry***

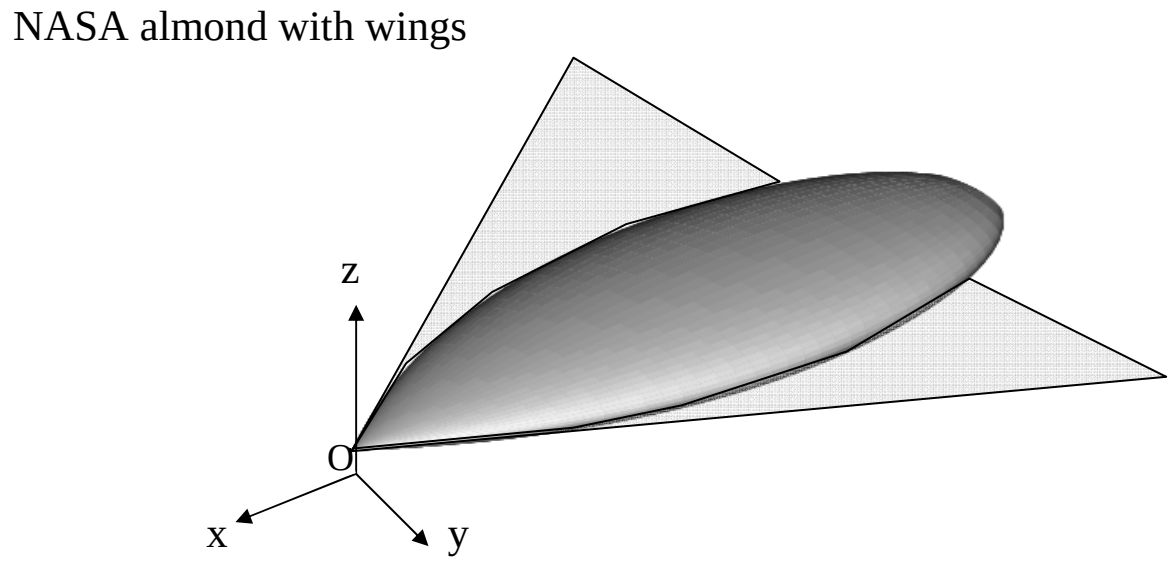
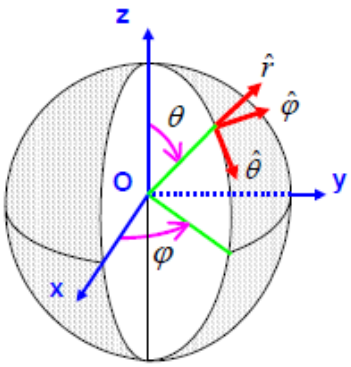


Figure 1 : Definition of the geometry.

The diffracting object is a perfectly conducting NASA ALMOND with wings. The plane of the wings is (xOy).

2 – ***Output results***

• Bistatic RCS of the NASA almond with wing, case 1:



In this case the incident wave is headed on the tip of the almond and the plane of observation is the plane of the wings.

- **frequency f = 8 GHz**
- **incident angles :** φ = 0° , θ = 90°
- **observation angles :** φ from 0° to 180°, angular step 0.1°, θ = 90°
- **polarizations :** φφ (PP) and θθ (TT)

• **Bistatic RCS of the NASA almond with wing, case 2:**

In this case, a shift of 30 degrees in θ is performed on source and observation directions.

- **frequency f = 8 GHz**
- **incident angles :** φ = 0° , θ = 120°
- **observation angles :** φ from 0° to 180°, angular step 0.1°, θ = 120°
- **polarizations** : φφ (PP) and θθ (TT)

3-*Diagram formats*

The results must be supplied in two ASCII files with 3 columns:
Angles of observation (degrees), RCS_PP (dB.m^2), RCS_TT (dB.m^2)

With the following suggestions for the name of the ASCII file:
NASA_almond_wing_case_1_Contributorname
NASA_almond_wing_case_2_Contributorname