# TEST CASE 2 WORKSHOP ISAE 2025

# THIN METALLIC TRAILING EDGE

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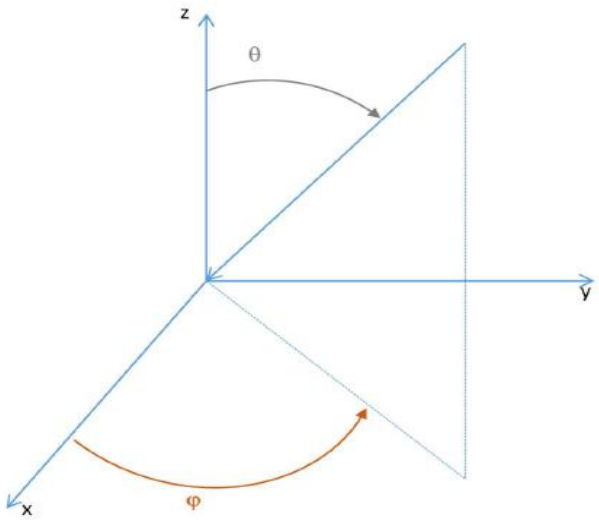
This test case is a metallic cylindrical body with a thin leading edge and a thin trailing edge. The objective is to evaluate the monostatic RCS of the trailing edge area.

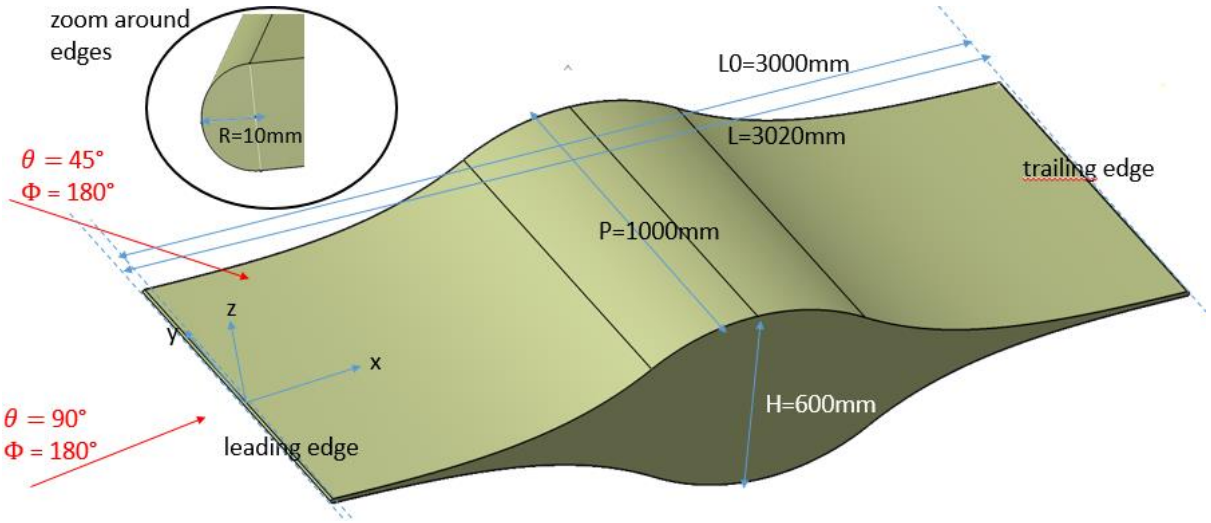
For the present test case, one input model (IGES format) for required simulations is provided: Case2.igs

## DESCRIPTIONS:




Angular convention

**3D metallic body with 3 symmetrical planes:**




With **L = 3020 mm** (along x axis), **H=600 mm** (along z axis) and **P=1000 mm** (along y axis).

The radius of the leading and trailing edges is **R=10mm**.

## OUTPUTS:

**Subtest case a) 3D body**

Frequencies: Fk from 12GHz to 18GHz with step 20MHz (301 frequencies)

Incident angles : $\Phi$i= 180°; $\theta$i = 90° to 45°, step 0.2° (226 angles)

Results: complex backscattering coefficients for both H and V polarizations

One ASCII output file: Case2_3D _RCS.txt containing 6 columns: Fk in GHz, $\theta$i in degrees, real(Ehh), imag(Ehh) , real(Evv), imag(Evv).

**Subtest case b) 2D body** with an infinite body along y-axis

Frequencies: Fk from 12GHz to 18GHz with step 20MHz (301 frequencies)

Incident angles : $\Phi$i= 180°; $\theta$i = 90° to 45°, step 0.2° (226 angles)

Results: complex backscattering coefficients (corresponding to $\lim_{P\to\infty} \frac{E(P)}{P}$).

One ASCII output file: Case2_2D _RCS.txt containing 6 columns: Fk in GHz, $\theta$i in degrees, real(Ehh), imag(Ehh) , real(Evv), imag(Evv).

For both cases, the chairpersons will process data from all participants, in order to extract the contribution of the trailing edge only (an impulse response filter will be used).