# TEST CASE X 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.
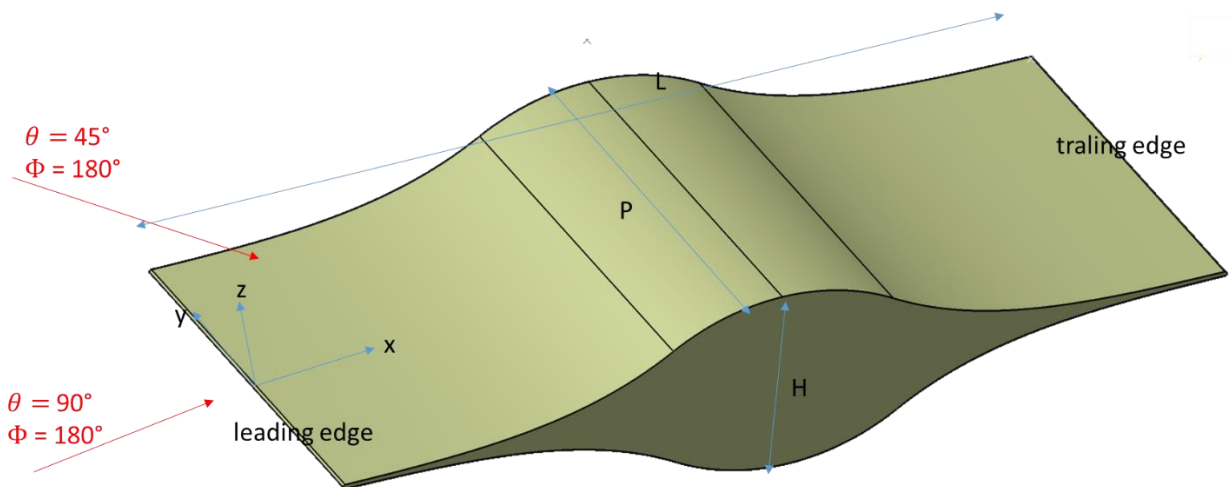
For the present test case, one input model (IGES format) for required simulations is provided: CaseX.igs

DESCRIPTIONS:
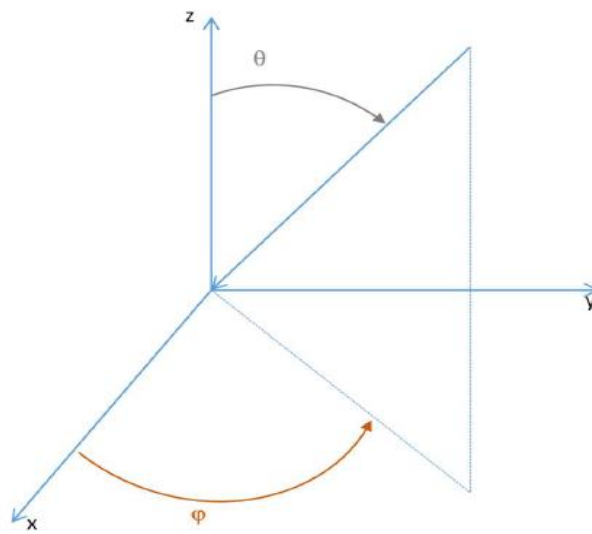
Angular convention

3D metallic body with 3 symmetrical planes:

With **L = 3 meters** (along x axis), **H=0.6 meters** (along z axis) and **P=1 meter** (along y axis)

The radius of the leading and trailing egdes is **10millimeters**.

Subtest case a) 3D body

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

Incident angles∶ Φi= 180°; θi = 90° to 45°, step 0.2° (226 angles)

Results: complex backscattering coefficients for both H and V polarizations

One ASCII output file: CaseX_3D _RCS.txt containing 6 columns: Fk in GHz, θi 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∶ Φi= 180°; θi = 90° to 45°, step 0.2° (226 angles)

Results: complex backscattering coefficients (corresponding to $\lim\limits_{P\to\infty}\dfrac{E(P)}{P}$).

One ASCII output file: CaseX_2D _RCS.txt containing 6 columns: Fk in GHz, θi 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).