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Session 5: Acoustic Finite Element Simulation

Exercise 1:

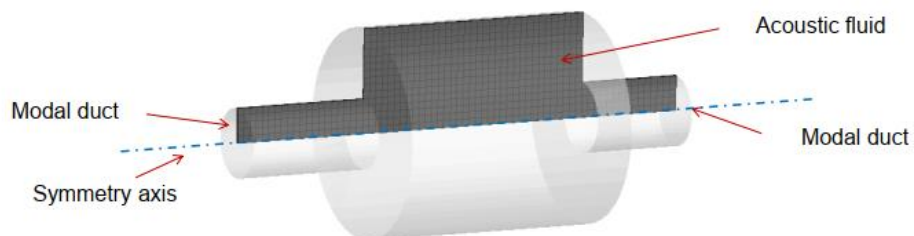
Perform the modal extraction of a cavity full of air (0.75m x 0.4m x 0.65m) as specified in the workshop: TP5_Cavity_modal_extraction.pdf.

Observe natural frequencies and mode shapes of the cavity.

Exercise 2:

Perform the axi-symmetric simulation of a muffler. All the instructions are detailed in the workshop: TP5_Muffler_transmission_loss.pdf

Observe and comment the difference between the finite element simulation results and the analytical solutions provided. Plot a few maps at different frequencies to elaborate your explanations.



Going further

- How would evolve the transmission loss curve with an elevation of the temperature of 100°C ?
Hint: the material properties need to be adapted