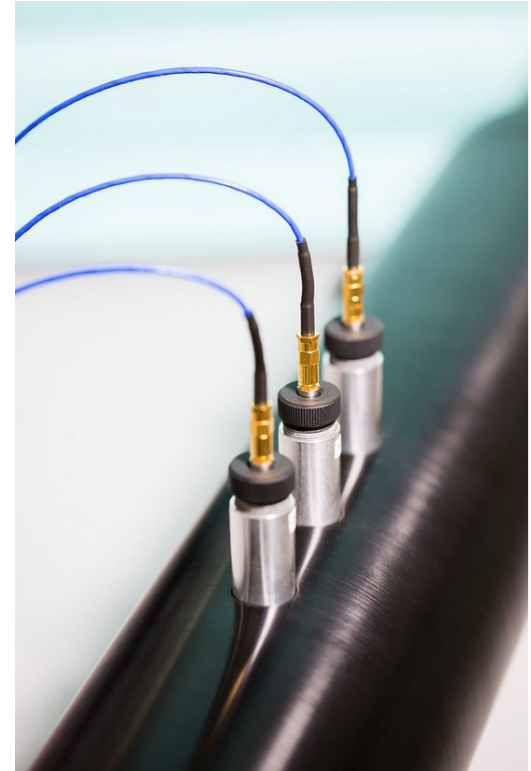
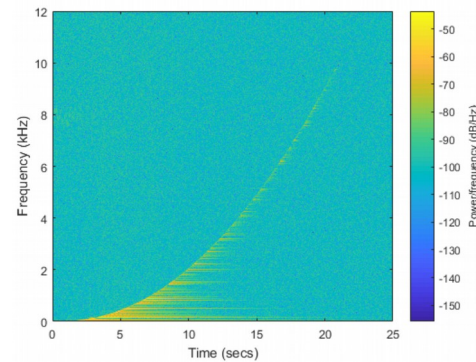
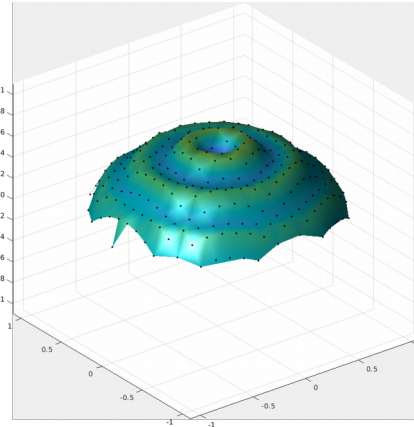
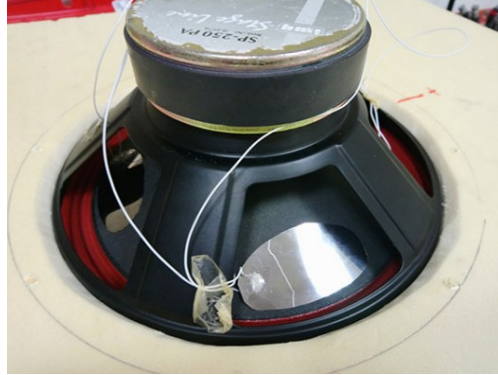
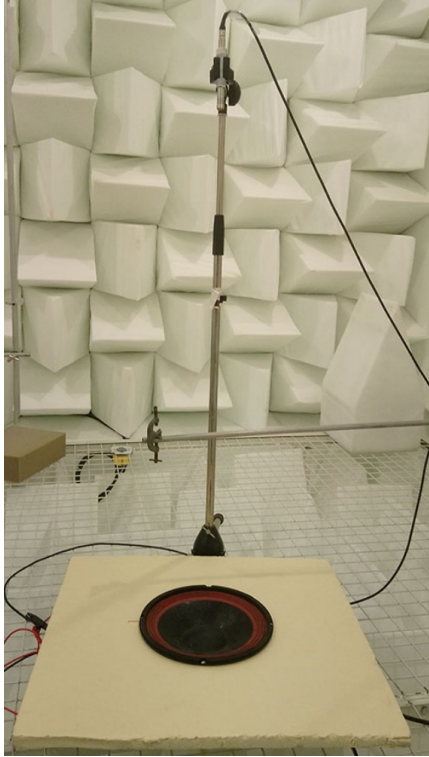


M2 Acoustical Engineering

Experimental projects

2018-2019

Olivier.doare
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M2 Acoustical Engineering

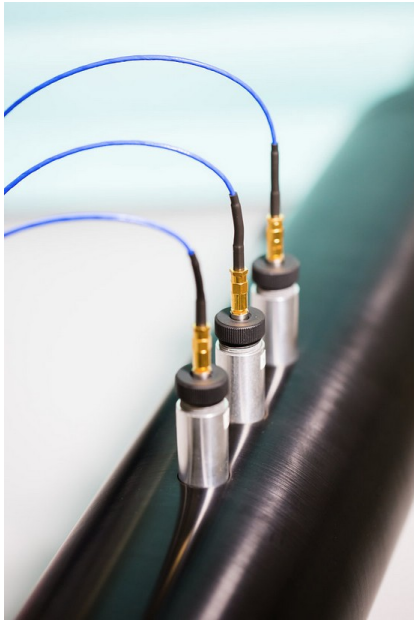
Experimental projects

Objectives

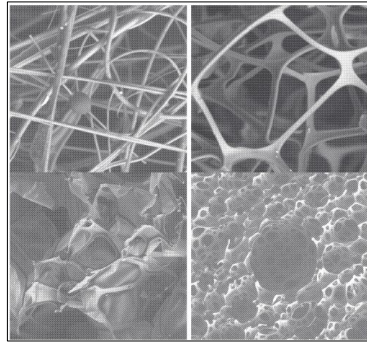
- Getting familiar with the main techniques in experimental acoustics
 - performing measurements and understanding their quality
 - using signal processing methods on acquired data
- Working on a scientific project
 - report writing
 - oral presentation
 - team work

M2 Acoustical Engineering Experimental projects

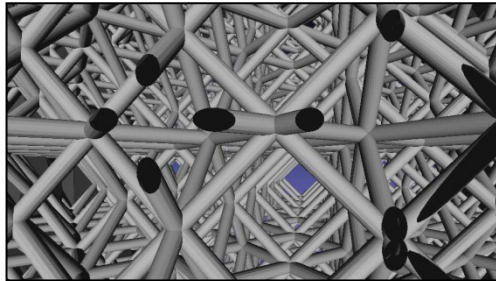
1 - Propagation through absorbing materials **OR** active metamaterials



Kundt tube : estimation of the macroscopic absorption coefficient of materials

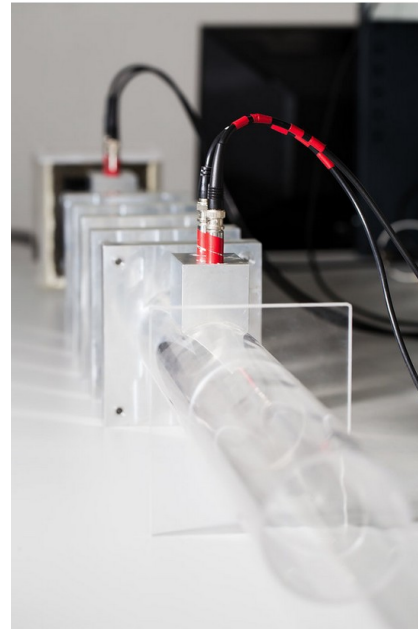


measurement of the microscopic topology of acoustic materials



FEM simulations

Active metamaterials experiment



Contacts :

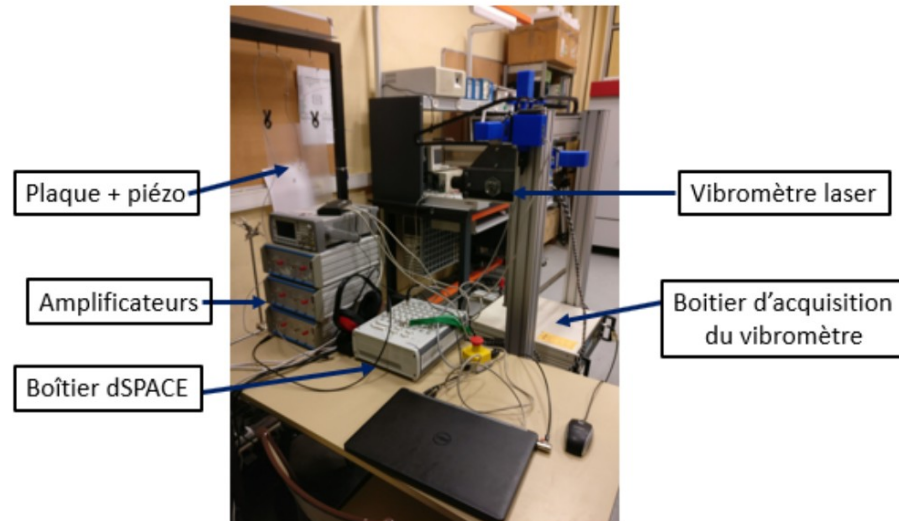
stephane.job@supmeca.fr

benoit.nennig@supmeca.fr



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2 - Project at ENSAM by ENSAM students



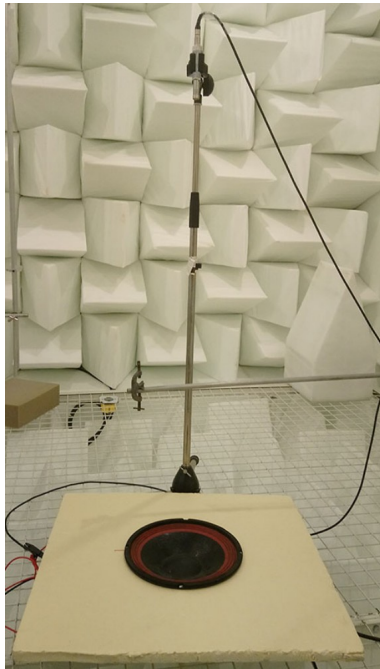
Contact :

Marc.REBILLAT@ensam.eu

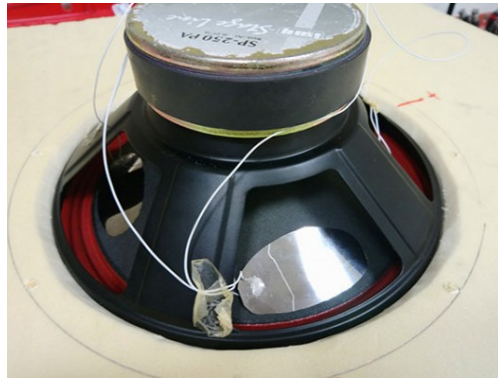
M2 Acoustical Engineering

Experimental projects

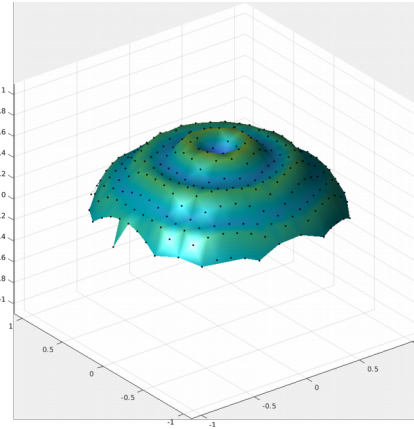
3 – Improvement of loudspeaker characteristics through piezoelectric forcing



Anechoic room
measurements



Loudspeaker with
piezoelectric patches



Modal analysis with scanning laser vibrometer



Contacts :

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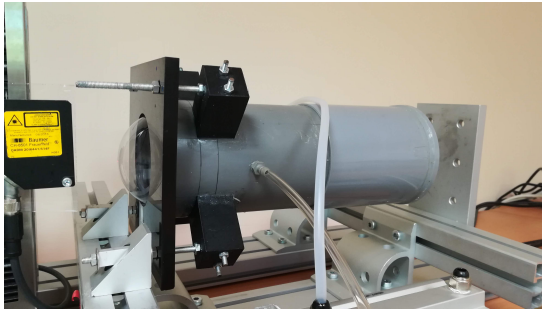
Emil.garnell@ensta-paristech.fr

IMSIA

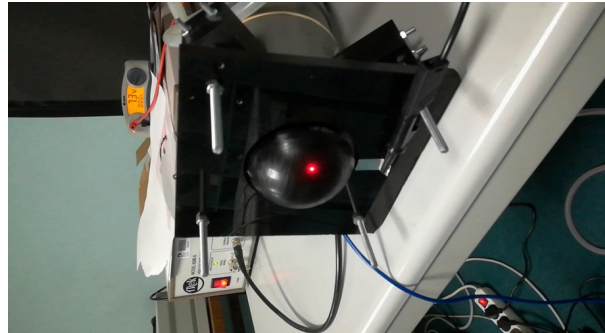
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M2 Acoustical Engineering Experimental projects

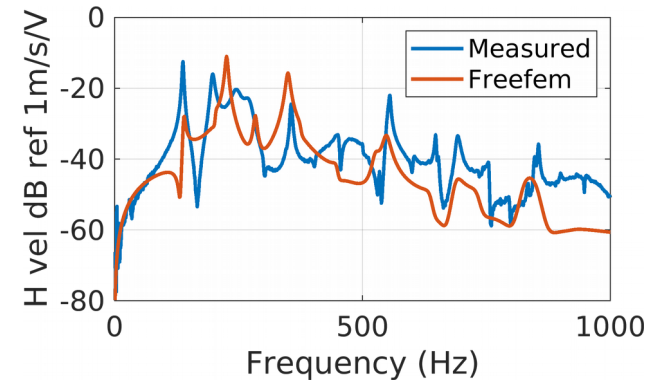
4 – Radiation of a thin inflated elastomer membrane



Project : Dielectric elastomer membranes



Dynamics and radiation measurements in anechoic room



Comparison with radiation models

Contacts :

Olivier.doare@ensta-paristech.fr

Emil.garnell@ensta-paristech.fr



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M2 Acoustical Engineering

Experimental projects

How to choose a project ?

- Send an email to olivier.doare@ensta-paristech.fr with :
 - One project ranked A (preferred choice)
 - One project ranked B (alternative choice)
- We'll do our best to satisfy everybody !