



Acoustical Engineering curriculum of the Master of mechanics

Academic partners



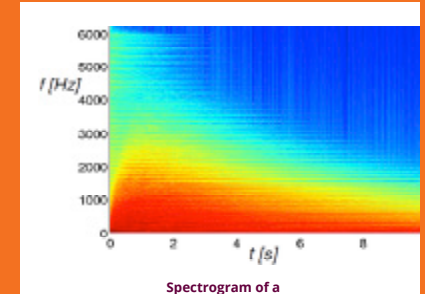
Industrial partners



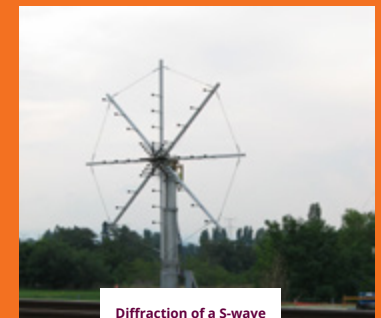
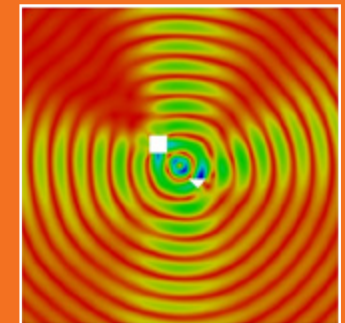
Objectives

The *Acoustical Engineering* curriculum of the Master of Mechanics offers French and international students the scientific knowledge needed to tackle current acoustical problems, in industrial and academic environments. Courses are focused on fundamental acoustics and acoustical engineering. By means of fundamental and applied research projects, the students have the opportunity to learn about different fields including:

- structural acoustics and fluid-structure interaction,
- wave propagation in solids and non-destructive testing,
- signal processing and signal synthesis in acoustical situations,
- aeroacoustics and wave propagation in inhomogeneous moving media,
- experimental techniques and psychoacoustics.



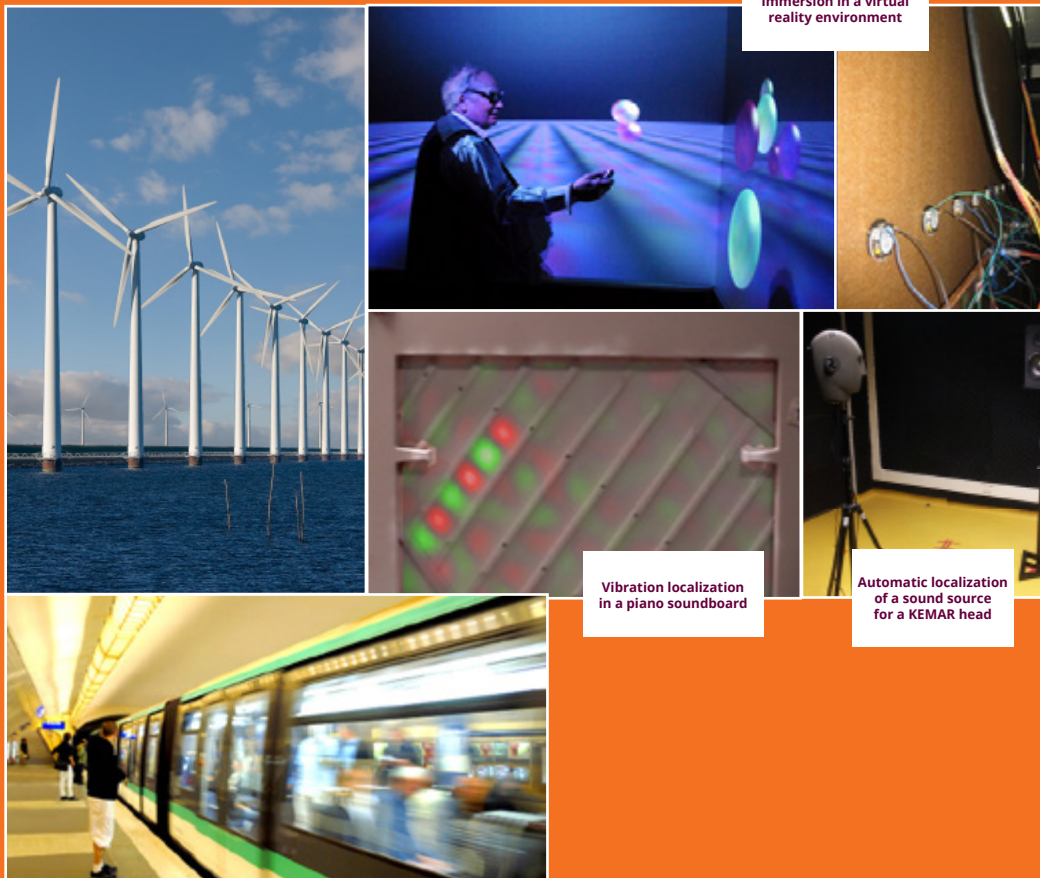
Spectrogram of a circular gong; numerical simulation



Diffraction of a S-wave by defects

Career opportunities

Acoustics is a multidisciplinary field at the borders between Mechanics, Signal Processing, Cognitive Sciences and Biology. Typical jobs for the graduates of this curriculum are R&D engineer-positions in companies or research centers and PhDs in Acoustics. The main fields of application are the transportation industry (ground, air and maritime transportation), energy production and transformation, urbanism and architecture, communication, and imaging in geosciences, structural monitoring and biology.



Courses

This 1-year program is one of the 6 curricula offered in the Master of Mechanics at the M2 level. It can be entirely followed in English.

Organization of the year

1st semester
10 courses
(30 ECTS)

8 courses in
Acoustical engineering

2 courses in *Acoustical engineering* or in other master's curricula

2nd semester
Internship
(30 ECTS)

Acoustical Engineering courses

1. General acoustics
2. Acoustical signal processing
3. Structural acoustics
4. Non destructive testing
5. Acoustic propagation in inhomogeneous moving media
6. Aeroacoustics
7. Experimental techniques in acoustics
8. Psychoacoustics
9. Sound synthesis and real time processing
10. Propagation et diffraction dans les guides d'ondes (in French)
11. Interaction fluide-structures (in French)

Contacts

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Application requirements and procedure

Admission to the Masters program at the M2 level is open to students with at least 4 years of higher education studies in Mechanics, Physics, Electrical Engineering or Applied Mathematics from an internationally recognized university.

More information on our website:
<http://acoustics-saclay.ensta-paristech.fr>