

Transducers Basics

Course information

ECTS: 2	Common with the master in Acoustics	Course code :
Lecture: none	Tutorial classes: 20h	Practical work: none

Course coordinator: Bruno Gazengel

External teacher coming from [R&D Team](#).

Course Description

Aim

The aim of this course is to know how to model electroacoustic systems with analytical approaches and equivalent networks.

Prerequisite

[Electronics refresh](#), [Vibrations refresh](#)

Contents

- * Model an electroacoustic system with an analytical approach and equivalent circuits.
- * Usual characteristics of an electroacoustic chain.
- * Analyze a mechanical system and represent the equivalent electrical diagram.
- * Calculate analytically the response of a mechanical system.
- * Analyze an acoustic system and represent the equivalent electrical diagram
- * Calculate analytically the response of an acoustic system.
- * Represent the equivalent network to the usual couplings (electromechanical, electroacoustic).
- * Represent the equivalent network to an electrodynamic transducer.
- * Calculate analytically the response (efficiency, sensitivity) of an electrodynamic transducer.

Literature

- * Leo L. Beranek, Tim Mellow, sound fields and transducers, Academic Press, 2012
- * Mendel Kleiner, Electroacoustics, Taylor & Francis, 2013
- * Martin Colloms, High Performance Loudspeakers, Wiley, 2005, 6th Edition
- * Joseph D'Appolito, Testing Loudspeakers , Audio Amateur Press, 1998
- * Mario Rossi, Audio, Presses Universitaires Polytechniques



Examination duration

2 hours

Examination type

Written examination