

Séminaire LVA

Acoustic transfer impedance of a small compression loudspeaker driver

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The overall subject of my research is the characterisation of airborne noise from vibrating bodies. The working hypothesis is that airborne sound from a vibrating body can be reproduced by a distribution of drivers mounted in a rigid and closed cabinet of simple shape. The principal factors influencing sound from a loudspeaker is the directional characteristics of the driver as well as diffraction effects due to the cabinet and the entire receiving room. The knowledge of transfer impedances is essential for the adaptation of a multiple driver loudspeaker system to a measured sound.

This presentation focuses on the behavior of a loudspeaker driver itself. An actual compression loudspeaker driver was tested, its performance confirming at least as an approximation that it can be seen as a simple source. Thereafter was a metric for volume velocity established, enabling experimental estimation of transfer impedances. The assessed driver is seen above. Sound pressure for a unit volume velocity from a driver in a cabinet was computed by a substitute source technique. Experimental and computational estimates were found to be similar enough to justify further research on the overall subject.

