

Séminaire LVA

Near-field Acoustic Holography based on combined measurements of the sound pressure and particle velocity

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Near-field Acoustic Holography (NAH) is a very useful sound source identification technique that makes it possible to reconstruct the acoustic field radiated by a source based on near-field measurements of, typically, the sound pressure. In recent years, with the availability of particle velocity transducers, the possibility of basing the NAH reconstruction on velocity instead of sound pressure has emerged. This offers some practical advantages, e.g., lower finite aperture error, better conditioning to noise, etc. Moreover, the combined measurement of both the sound pressure and particle velocity expands the possibilities of the NAH reconstruction and can be very advantageous in some applications.

This talk presents and discusses the potential of combining sound pressure and particle velocity measurements in the context of Near-field Acoustic Holography, as well as the limitations and technical challenges posed by the p-u techniques. Particular emphasis is placed on sound field separation techniques, in which sound coming from both sides of the array can be separated based on the combined information provided by the sound pressure and particle velocity fields.