

# **Theoretical and Practical Aspects of Microphone Array Design**

*Yves Grenier*

ENST, dept SIGNAL  
46 rue Barrault  
75634 Paris Cedex 13 France

## **Abstract**

Microphone arrays improve the quality of sound acquisition by reducing ambient noise and jammer sources, and also by reducing the amount of reverberation. This talk will discuss the theoretical framework used in the design of microphone arrays. Practical application of the design techniques leads to several difficulties. In this talk, we will consider two kinds of errors, those induced by imperfections of the acquisition chain, and those induced by erroneous propagation models. We will focus upon a robust solution to these two problems, by means of the online identification of the transfer function of acoustic paths.