

## **An Introduction to Virtual Sound Barriers**

Xiaojun Qiu

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According to the author, Xiaojun Qiu, “a virtual sound barrier is an active noise control system that uses arrays of loudspeakers and microphones to create a useful quiet zone in a noisy environment, just like an ordinary (passive) sound barrier but without much blocking of air, light, and access.” This book entitled *An Introduction to Virtual Sound Barriers* provides the clear account of the virtual sound barrier's design methods, as well as its applications and limitations.

The book opens with the concepts in sound propagation, followed by discussions on the basic principles of various sound barriers that can be utilized to protect an acoustically sensitive receiver/habitat by reducing the source sound propagation and transmission or reducing the source sound levels around select listeners in a noisy

environment (Chapter 1). The book discusses next the principles, the design methods, and also the application/limitations of two virtual sound barrier systems, i.e., planar virtual sound barrier system and three-dimensional virtual sound barrier system (Chapter 2 and Chapter 3). Two examples of the virtual sound barrier applications for noise control are introduced in Chapter 4, along with the discussion on the recent research progress on the virtual sound barrier (Chapter 5). The book is most suited for the audiences with a background in noise and vibration control, room acoustics, electroacoustics, or audio signal processing focusing on the applications of active noise control technologies.

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