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An open acoustic barrier: Design and characterization

Nowadays, due to the problems that exist in terms of noise pollution and its impact on health, it is common to use acoustic barriers. Traditionally, these barriers consisted of rigid and continuous materials that are interposed between the source and the receiver. However, there are situations in which the characteristics of the problem necessitate the use of new noise shielding systems. The design and characterization of open acoustic barriers is presented in this work. These are tunable acoustic barriers based on periodic arrays of subwavelength slits. The acoustic response of periodically arranged rectangular scatters with a subwavelength separation between them and embedded in air is discussed. The results point out that these systems can be tuned to attenuate specific band noise and can be used instead of classical barriers.

Speaker Biography

Constanza Rubio Michavila was born in Spain. Her research line has been developed in the area of Applied Acoustics. Throughout his research career, she has participated in 14 research projects subsidized in public calls. She has published 30 articles in journals included in the JCR, of which 2 articles are published in Physical Review Letters, 3 Applied Physics Letters, 1 Physical Review B, 2 Physical Review E, 2 Applied Physics Express and 1 Europhysics Letters, among others. All of them located in relevant positions in their category. She is also co-author of 25 papers presented at international congresses, several of which are invited talks. She has been chairman in several international congresses. In the technological field, she is co-author of 3 patents. In addition, in the teaching field is author and teacher of several MOOCs that are on the edX platform. She is also a conventional teacher in undergraduate and master's subjects. She is also the director of 6 final master's thesis projects, some of them international and co-director of several doctoral theses.

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