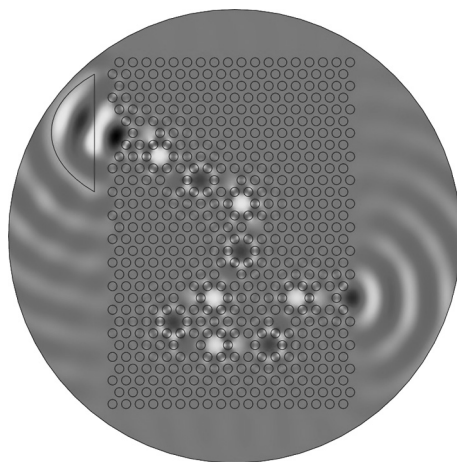


COMPTES RENDUS PHYSIQUE

Tome 17 (2016) – N° 5 – mai



Guidance of acoustic phonons along a chain of coupled cavities in a phononic crystal. Cavities are formed by defects in the hexagonal-lattice crystal. The excitation frequency of the source on the left lies within a complete band gap of the crystal, prohibiting the propagation of phonons away from cavities.

At the exit of the waveguide, to the right, waves are re-emitted as if from a point source.

Guidage de phonons acoustiques le long d'une chaîne de cavités couplées dans un cristal phononique.

Les cavités sont formées par des défauts du cristal de réseau hexagonal. La fréquence d'excitation de la source à gauche correspond à une bande interdite complète du cristal, empêchant la propagation des phonons hors des cavités. À la sortie du guide d'onde, sur la droite, les ondes sont réémises comme depuis un point source.

DOSSIER

Phononic crystals / Cristaux phononiques

Coordinator / Coordinateur : Vincent Laude

- Phononic crystals: Harnessing the propagation of sound, elastic waves, and phonons
Vincent Laude 497
- Three-dimensional ultrasonic colloidal crystals
Mihai Caleap, Bruce W. Drinkwater 501
- Harvesting vibrations via 3D phononic isolators
Ioannis E. Psarobas, Vassilios Yannopoulos, Theodore E. Matikas 512
- How diffraction limits ultrasonic screening in phononic plate composed of a periodic array of resonant slits
Aliyasin Elayouch, Mahmoud Addouche, Philippe Lasaygues, Younes Achaoui, Morvan Ouisse, Abdelkrim Khelif 518
- Acoustic metamaterials for sound mitigation
Badreddine Assouar, Mourad Oudich, Xiaoming Zhou 524
- Negative refraction and imaging of acoustic waves in a two-dimensional square chiral lattice structure
Sheng-Dong Zhao, Yue-Sheng Wang 533

Continued on the next page

Contents (continued)

- Nonlinear propagation and control of acoustic waves in phononic superlattices
Noé Jiménez, Ahmed Mehrem, Rubén Picó, Lluís M. García-Raffi, Víctor J. Sánchez-Morcillo 543
- Phoxonic crystals and cavity optomechanics
Bahram Djafari-Rouhani, Said El-Jallal, Yan Pennec 555
- Generalized Bloch's theorem for viscous metamaterials: Dispersion and effective properties based on frequencies and wavenumbers that are simultaneously complex
Michael J. Frazier, Mahmoud I. Hussein 565