

Accepted Manuscript

Perforated membrane-type acoustic metamaterials

F. Langfeldt, H. Kemsies, W. Gleine, O. von Estorff

PII: S0375-9601(16)32127-2
DOI: <http://dx.doi.org/10.1016/j.physleta.2017.02.036>
Reference: PLA 24371

To appear in: *Physics Letters A*

Received date: 24 December 2016
Revised date: 14 February 2017
Accepted date: 20 February 2017

Please cite this article in press as: F. Langfeldt et al., Perforated membrane-type acoustic metamaterials, *Phys. Lett. A* (2017), <http://dx.doi.org/10.1016/j.physleta.2017.02.036>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Highlights

- A new membrane-type acoustic metamaterial exhibiting negative density is presented.
- The metamaterial design contains a ring mass with a perforation through the membrane.
- The sound transmission loss exhibits narrow-band peaks much higher than the mass-law.
- The emergence of the peaks is explained using a simple theoretical model.
- Impedance tube measurements are used to validate the theoretical predictions/

Download English Version:

<https://daneshyari.com/en/article/5496875>

Download Persian Version:

<https://daneshyari.com/article/5496875>

[Daneshyari.com](https://daneshyari.com)