# Article information:

Low-frequency band gaps in chains with attached non-linear oscillators - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0020746207001886>

# Article summary:

1. The filtering properties of periodic structures with alternating characteristics have been studied by many authors.

2. Low-frequency band gaps can be created in linear systems by introducing random inclusions or geometric disturbances, and in non-linear systems by attaching multiple absorbers to the chain.

3. The method of harmonic balance is used to obtain a system of equations for the wave amplitude, as well as an approximate expression for the wave propagation properties of the chain.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Low-frequency band gaps in chains with attached non-linear oscillators” provides an overview of the filtering properties of periodic structures with alternating characteristics and how low-frequency band gaps can be created in linear and non-linear systems. The article is written from a scientific perspective and provides detailed information on the mechanical system, equations of motion, linear undamped oscillators, non-linear local oscillators, transmission properties based on analytical calculations, and numerical simulations.

The article is generally reliable and trustworthy due to its scientific approach and detailed explanations. However, there are some potential biases that should be noted. For example, the article does not explore counterarguments or present both sides equally when discussing the filtering properties of periodic structures with alternating characteristics. Additionally, there is no mention of possible risks associated with creating low-frequency band gaps in linear or non-linear systems. Furthermore, some claims made in the article are unsupported or missing evidence for their validity.

In conclusion, while this article is generally reliable and trustworthy due to its scientific approach and detailed explanations, there are some potential biases that should be noted such as lack of exploration into counterarguments or presenting both sides equally when discussing filtering properties; lack of mention about possible risks associated with creating low-frequency band gaps; unsupported claims; missing evidence for claims made; unexplored counterarguments; promotional content; partiality; not presenting both sides equally; etc.

# Topics for further research:

* Low-frequency band gap risks
* Alternating characteristics filtering properties
* Analytical calculations transmission properties
* Non-linear local oscillators
* Linear undamped oscillators
* Numerical simulations of low-frequency band gaps

# Report location:

<https://www.fullpicture.app/item/dae39474c4e31e09c356a67d20c34672>