# Article information:

Acoustic design of small rectangular rooms: Normal frequency statistics - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S0003682X07001685>

# Article summary:

1. A new procedure for selecting optimum geometric proportions of small rectangular rooms has been proposed, taking into account the eigenfrequencies up to the Schroeder frequency and considering also the surface averaged sound absorption coefficient (α).

2. The range of acceptable dimension ratios decreases with decreasing α, and for mean absorption coefficient lower or equal 0.3 there are only a few of the ratios for which a uniform distribution of eigenmodes is obtained.

3. Analysis of the distribution of eigenmodes should be performed taking into regard not only the geometrical dimensions of the room but also its mean acoustic absorption.

# 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 “Acoustic design of small rectangular rooms: Normal frequency statistics” provides an overview on how to select optimum geometric proportions for small rectangular rooms in order to achieve a uniform distribution of eigenmodes. The article is well-structured and provides detailed information on how to calculate parameters such as ψ and Ω in order to determine the optimal dimensions for a given room.

The article is written by experts in their field and provides reliable information based on scientific research and analysis. The authors provide evidence for their claims by citing relevant sources, such as Bolt’s work, Schroeder’s work, and Eyring formula. Furthermore, they provide detailed calculations and figures that support their conclusions.

However, there are some potential biases in the article that should be noted. For example, the authors focus solely on small rectangular rooms when discussing acoustic design; other shapes or sizes are not considered or discussed in detail. Additionally, while they do discuss different values of α¯, they do not explore other factors that could affect acoustic design such as room size or shape. Finally, while they do discuss possible risks associated with standing waves in small enclosures, they do not provide any recommendations on how to mitigate these risks or what steps can be taken to reduce them.

In conclusion, this article provides reliable information about acoustic design for small rectangular rooms based on scientific research and analysis; however it does have some potential biases that should be noted when considering its trustworthiness and reliability.

# Topics for further research:

* Acoustic design for non-rectangular rooms
* Mitigating standing wave risks in small enclosures
* Room size and shape effects on acoustic design
* Bolt’s work on acoustic design
* Schroeder’s work on acoustic design
* Eyring formula for acoustic design

# Report location:

<https://www.fullpicture.app/item/c04a32de1b0af21059b257484017071e>