

THE MANUSCRIPT [9]

First of all I would like to thank reviewers for helping me make this paper better and learn more.

Reviewer 1:

Answer to the Comments:

I analyzed frequency of the sound produced by the rods because I believed that this parameter is the main characteristic of the sound and useful in understanding the structure and behavior of the waves propagating in the rods.

I do agree that studying other characteristics such as amplitude could be interesting as well but that way more specific and careful studies on type of hitting (angle of hitting, energy,..) should be done.

Also studying timber and color of the sound would be a fascinating task but these characteristics (which are somehow synonyms) are mostly investigated for musical instruments and in the case of these IYPT problem may describe why we call this sound a shriek but I believe still not necessary in understanding the structure and main character of the sound.

Organization and Presentation:

-Some changes were done on spacing.

-Added some information about my approach and conclusions to the abstract.

Style:

I tried to improve it

Additional Questions:

- What is the main cause of the sound?

When we strike the rods some waves propagate in it, these waves will make the air vibrate and produce a sound.

- Are the transverse and longitudinal waves the only type of waves that exist in the rod?

No there are also torsion waves that can be produced in the rods if there are struck at the edges but I neglected them(I added this part to the paper).

- What do you mean by diagram in "These frequencies can be observed in the diagram", page 4?

I changed diagram to spectrum and it refers to spectrum of Fourier analysis done on the sounds which I recorded by hitting the rods.

References:

Corrected

Recommendation:

– Change and repair the resolution of the pictures (they are very hard to read).

Sometimes the description of the picture is in the margin, out of the printing area – repair it. The same comment for equations (e.g. page 5).

Tried to improve them.

– Attach a chapter with a discussion of limitations of your solution.

Added

Reviewer 2:

Page 2: “diagram(amplitude verses frequency)”. It is called spectrum. Use the term in the manuscript.

corrected

Page 3: “young modulus”. It is called “Young's modulus”.

corrected

Try re-plotting your graphs in some graph-oriented software (like Origin or Advanced grapher). At least format them in a scientific way (big points, no lines between

experimental points, and at least no line smoothing). No “bad” notations on each axis (like zero frequency).

changed

Try re-plotting the spectra in more suitable software.

Unfortunately re-plotting in other software did not have a better result.

Effect of place of hitting: an additional theoretical investigation needed. Why there is no change even if we hit at a node?

Actually if you hold a rod in one node and strike it at other node the wave which has the same nodal position may be produced but will damp so quickly and this is also depended two that specific harmonic cause higher frequencies will damp faster.

Editorial request

I applied all the mentioned changes.

Zahra Karimi