

# 17. Standing Waves

REVIEW

Greece - Alliance ★

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I.Y.N.T. 2021

# Reporter - Theory

## PROS

- Referred to the definition of the standing waves.
- Included some relevant theory (however not all the significant)

## CONS

- Did not state how the standing waves are formed (superposition of two travelling waves)
- Did not include a “predictive” theory in relevance with the number of nodes
- Did not refer to the dependance between the length of the string  $L$  and the wavelength  $\lambda$  of possible standing waves
- The estimation of the wave speed in a stretched string was not included in the presentation

# Reporter - Experiments & Results

## PROS

- Included some visual aid in order to support his experimental procedure.

## CONS

- Did not form neither a problem statement nor hypothesis.
- Did not include an experimental set up-materials-procedure.
- There is no presentation of the results.
- Significant parameters, such as the linear mass density of the string and the rope tension were not tested.
- Did not present his results in a graph or a table.
- Did not understand the problem and experimented on running waves instead of standing waves.

# Opponent

## PROS

- Evaluated some parts of the reporter's presentation (but not all of them)

## CONS

- Lack of presentation
- Did not refer to significant aspects that were missing from the presentation (the linear mass density of the string and the rope tension)
- Did not focus on the connection between theory and experiment that was lacking.
- Did not state any hypothetical case, such as “what would be different if one end of the rope was free?”, etc

# Missed Points

- ❖ Even though there were no questions or suggestions from the opponent to the reporter we can suggest what could the discussion could be.
  - The opponent could ask about the role of the linear mass density of the rope to the outcome
  - She could also refer to the lack of theoretical background and the missing parameters (rope tension, etc)



# SUGGESTIONS

## Reporter:

- Look at the literature describing dependence between the length of the string  $L$  and the wavelength  $\lambda$  and the estimation of the wave speed in a stretched string.
- Answer with more details and arguments.
- Provide more time to create clear hypothesis based on theoretical data, set and explain the experiment properly.
- Be focused on the standing and not running waves.

## Opponent:

- Express her questions with more detail and try to stay focused on the missing points by the presentation of the reporter.
- Focus on the missing parts of the presentation both in the theory and the experiment.

Thank you for  
your attention