

Motion Parallax mediated Depth Perception in Grasshopper

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Grasshopper



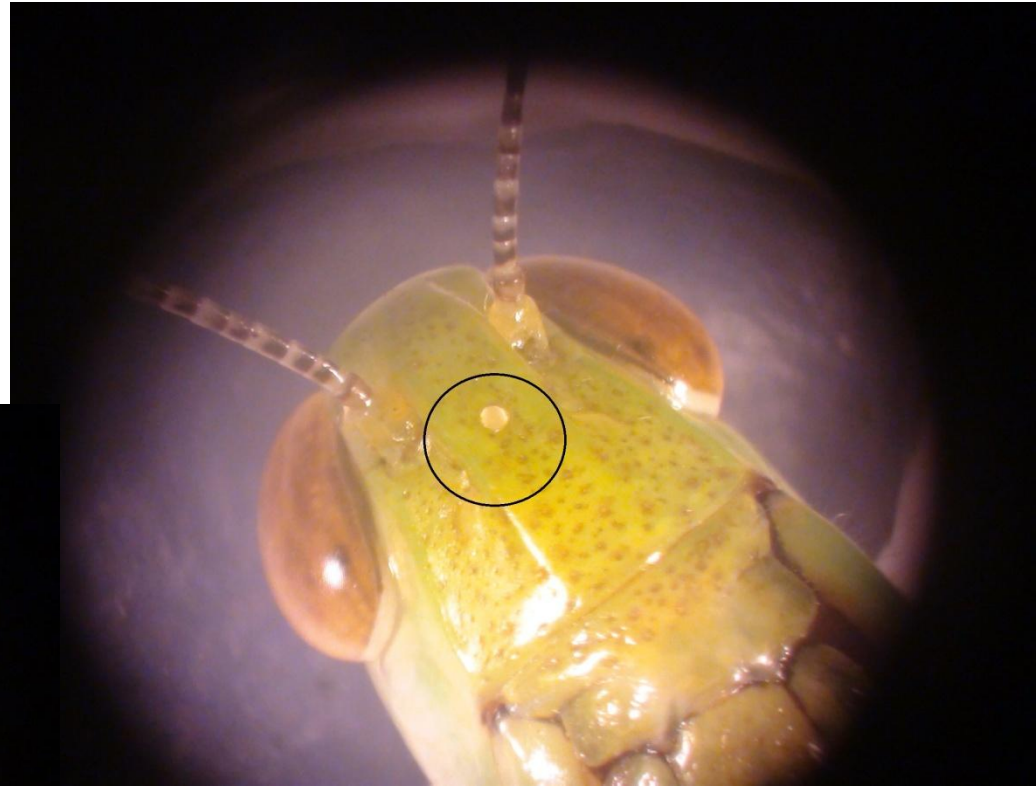
2014. 10. 22



- Agile
- Accurate jumps
- Stable flight

- Phototaxis
- Peering

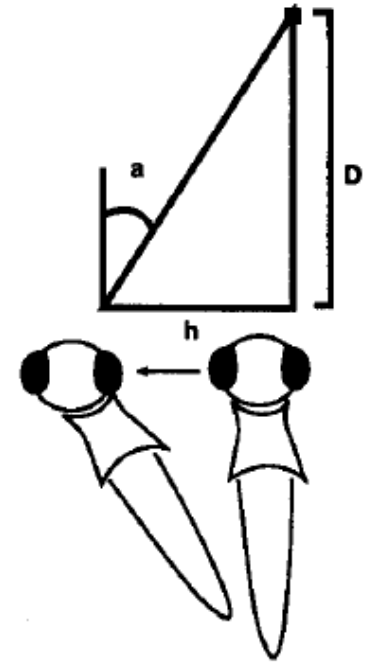
Locust Visual System



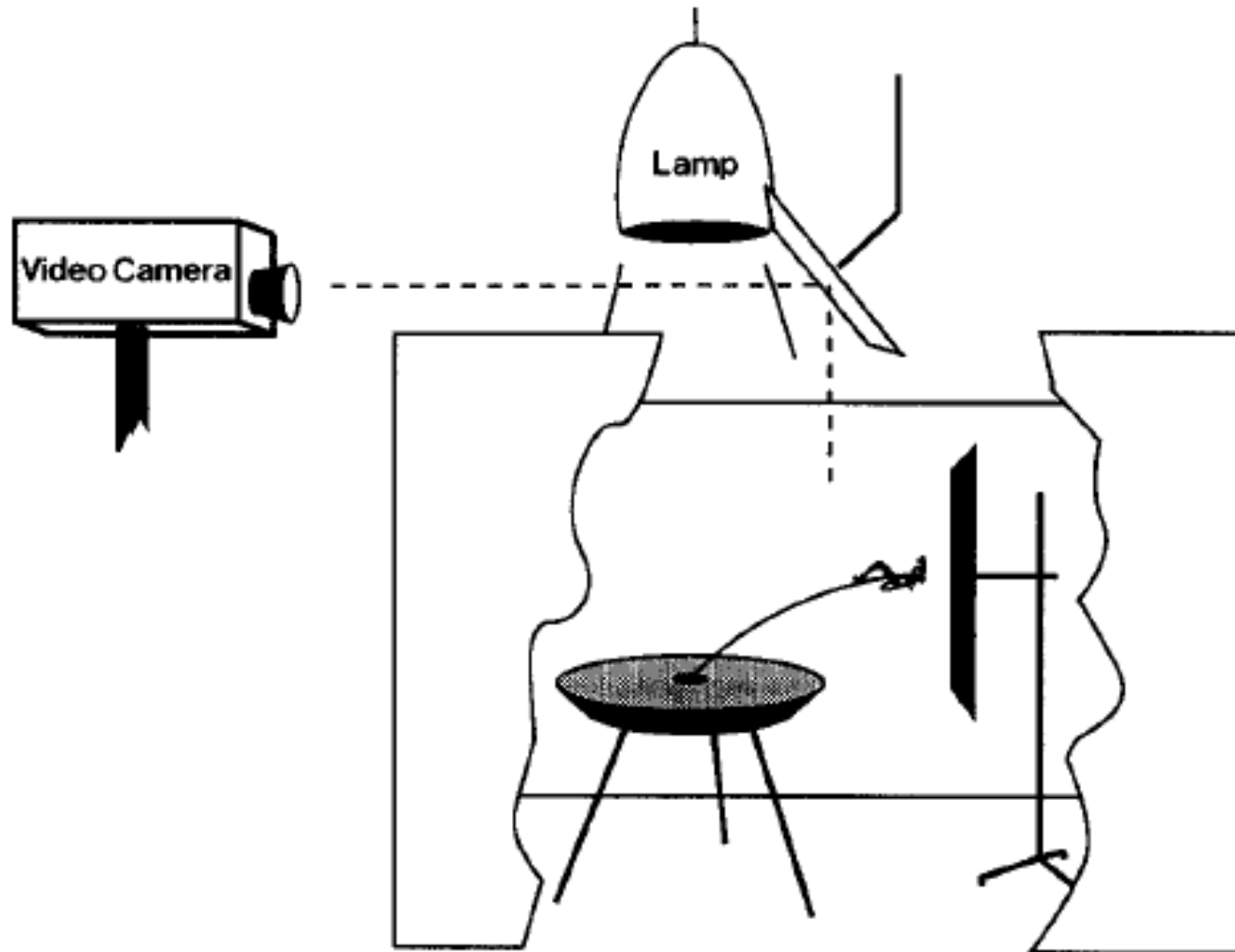
Peering Behavior



$$D = h / \tan(a)$$



Experimental Setup

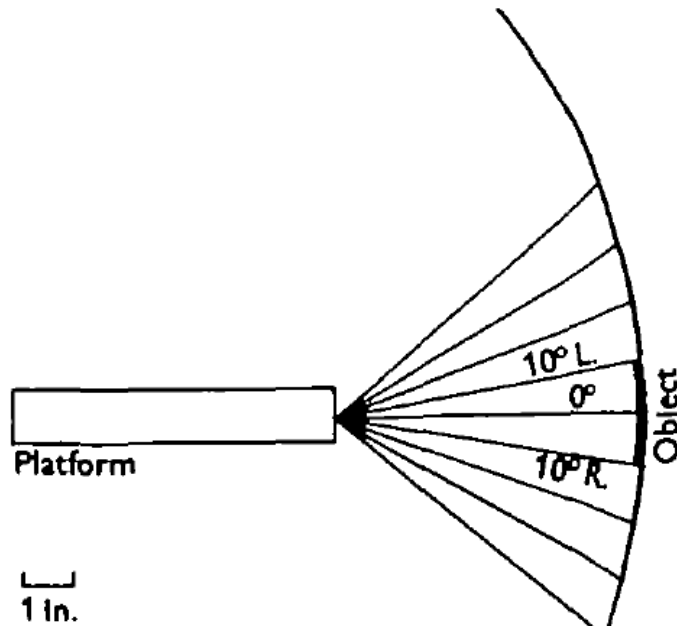


Proposal A

1. Do grasshoppers possess peering based monocular depth perception?
2. How do they integrate the monocular cues to obtain binocular depth perception?

Proposal B

Do grasshoppers perceive depth of moving objects?



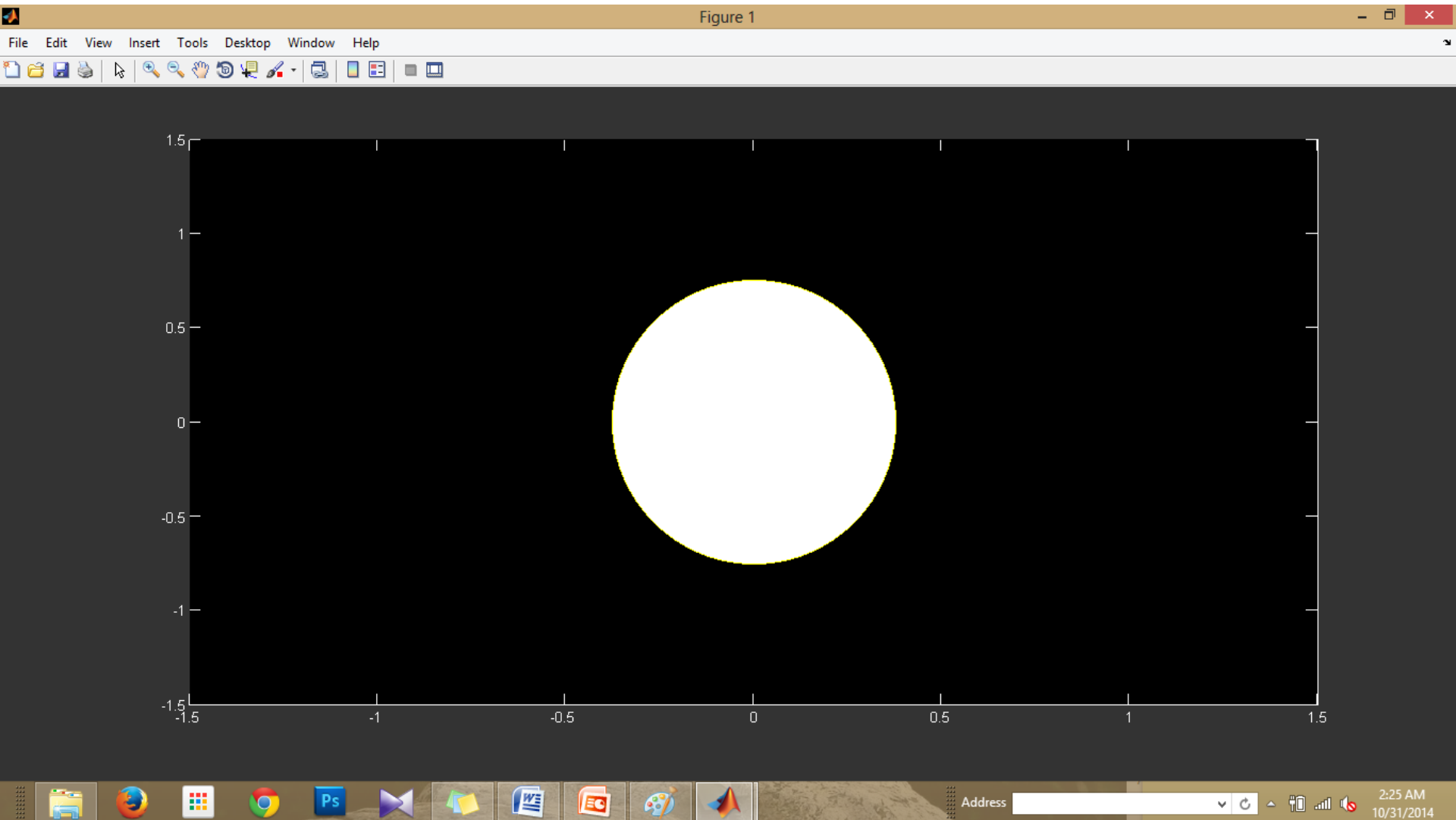
(a)

Work done so far

1. Flight Experiments on Conehead grasshoppers

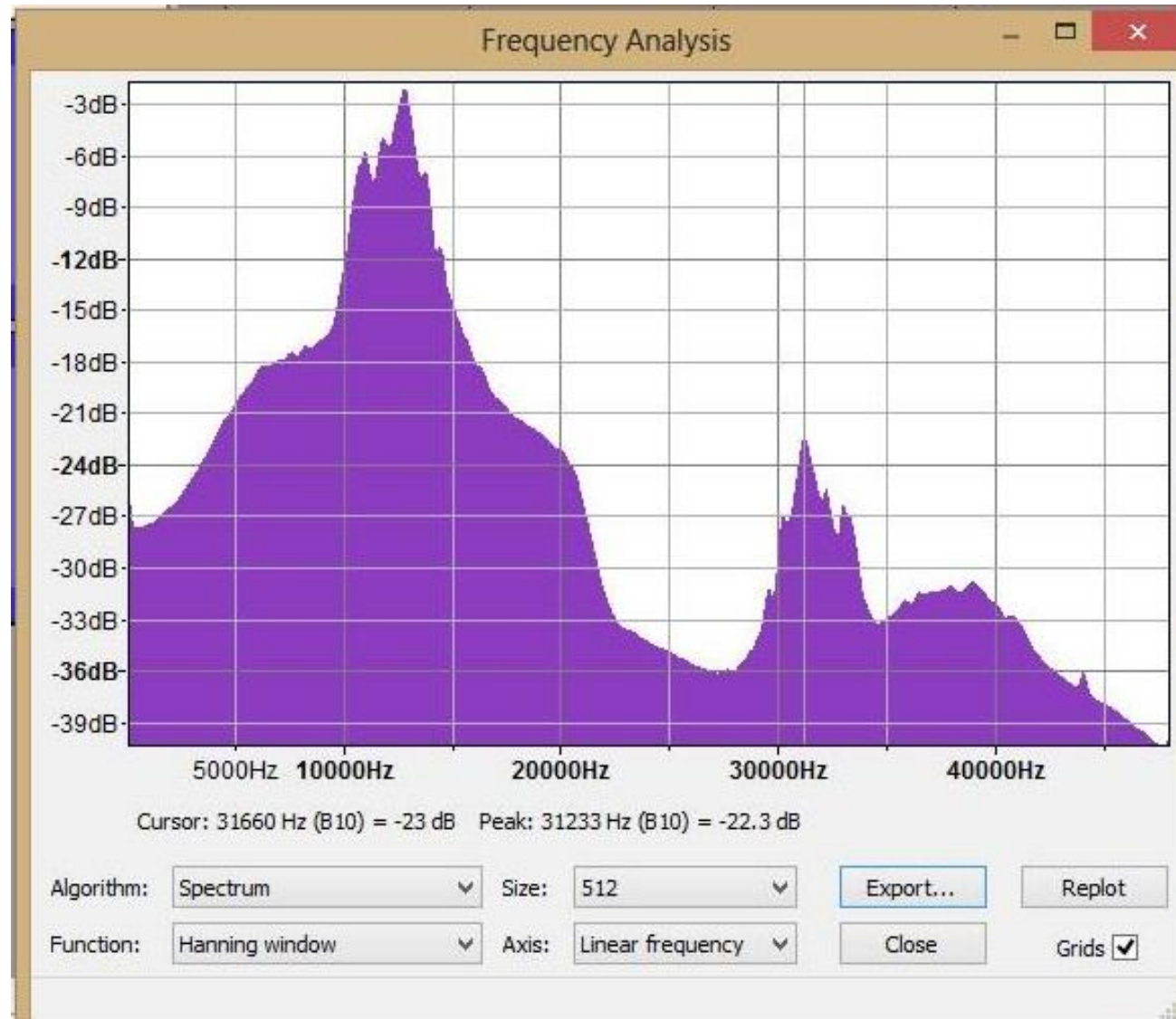


Visual Stimuli- MATLAB



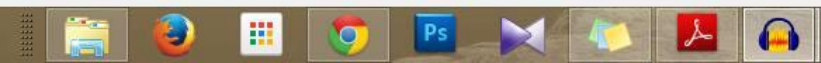
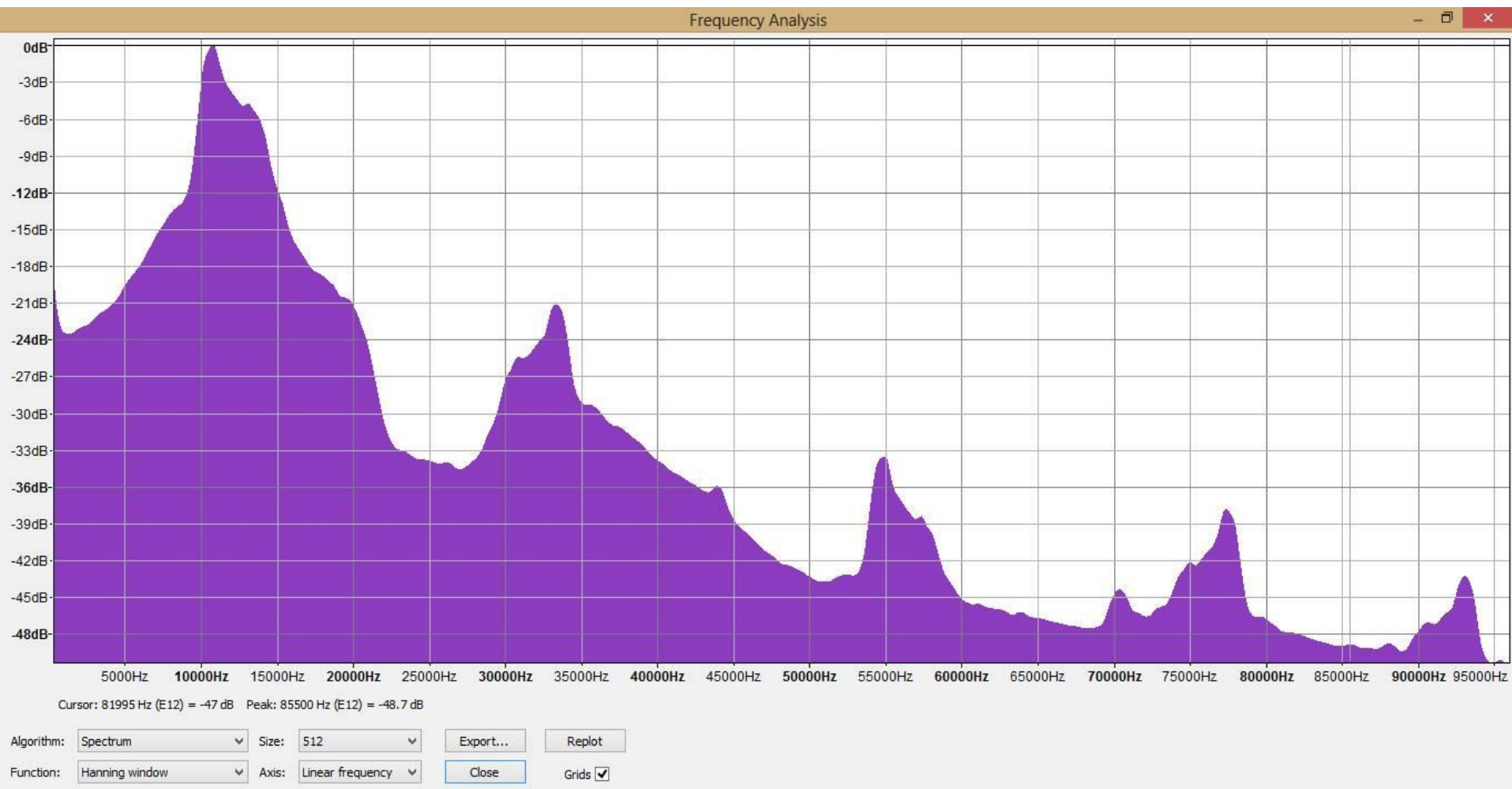
2. Acoustics Experiment on Coneheads

Mating
Call



2. Acoustics Experiment on Coneheads

Fighting Call



Thank You!

