

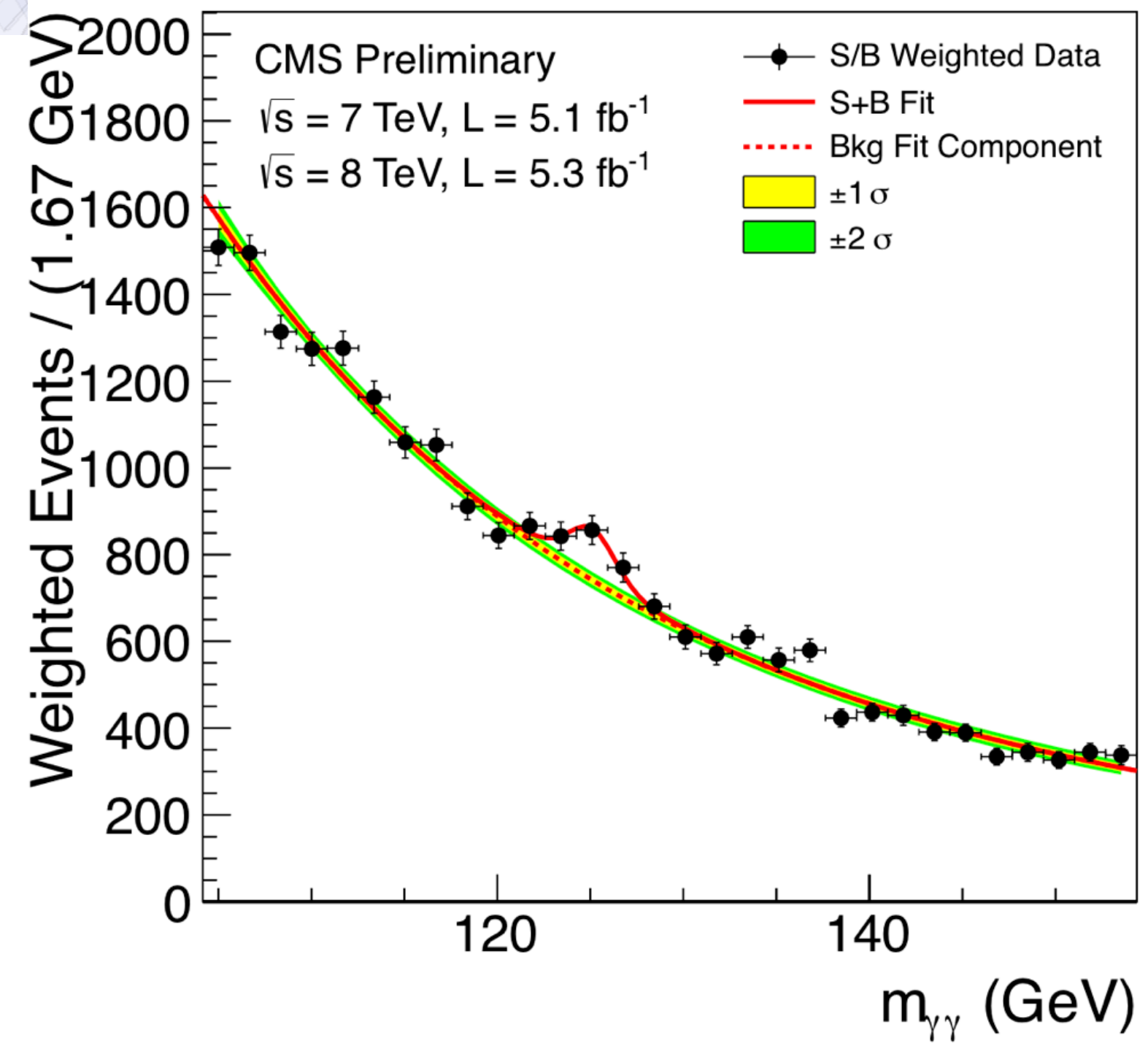
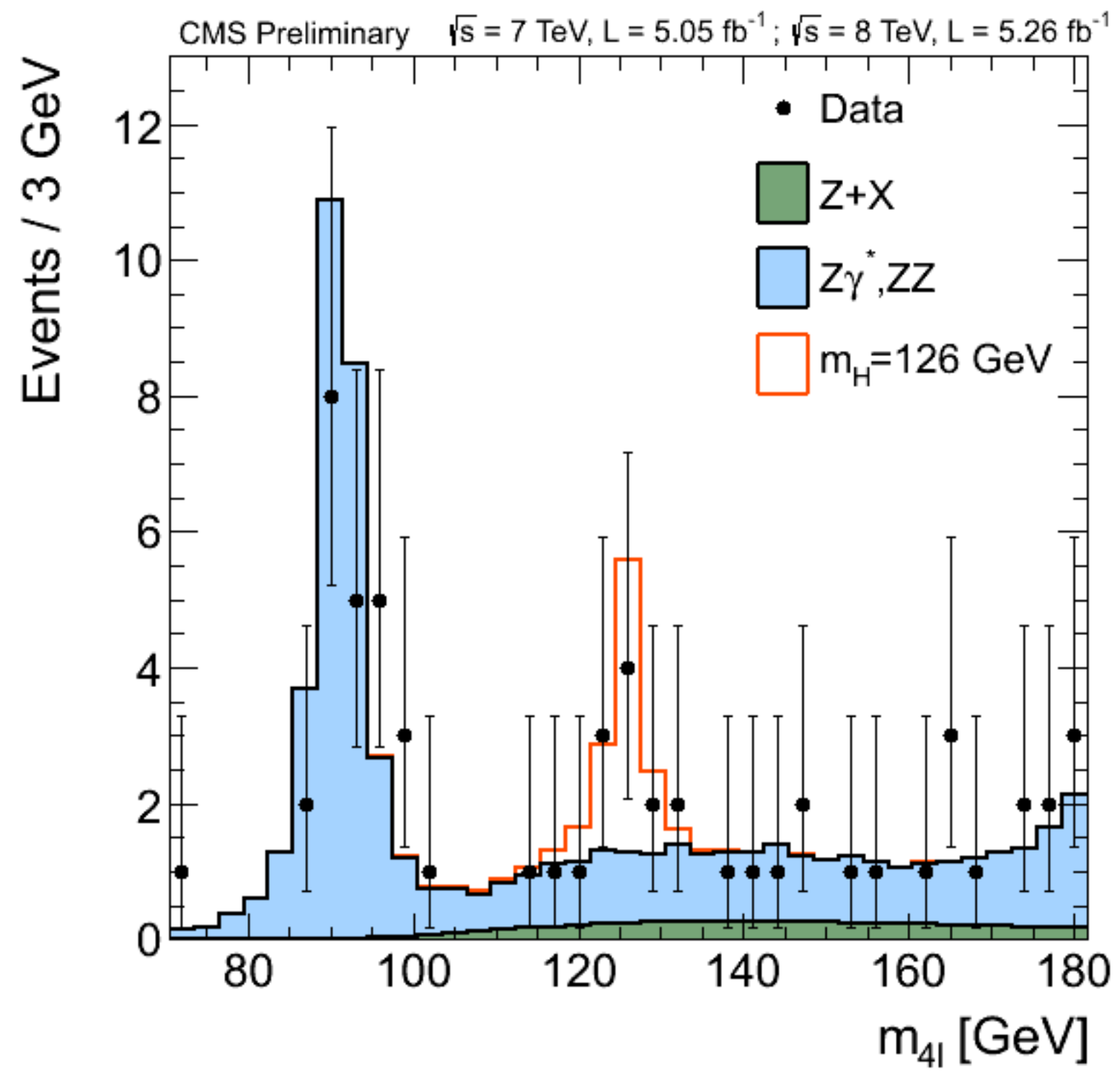
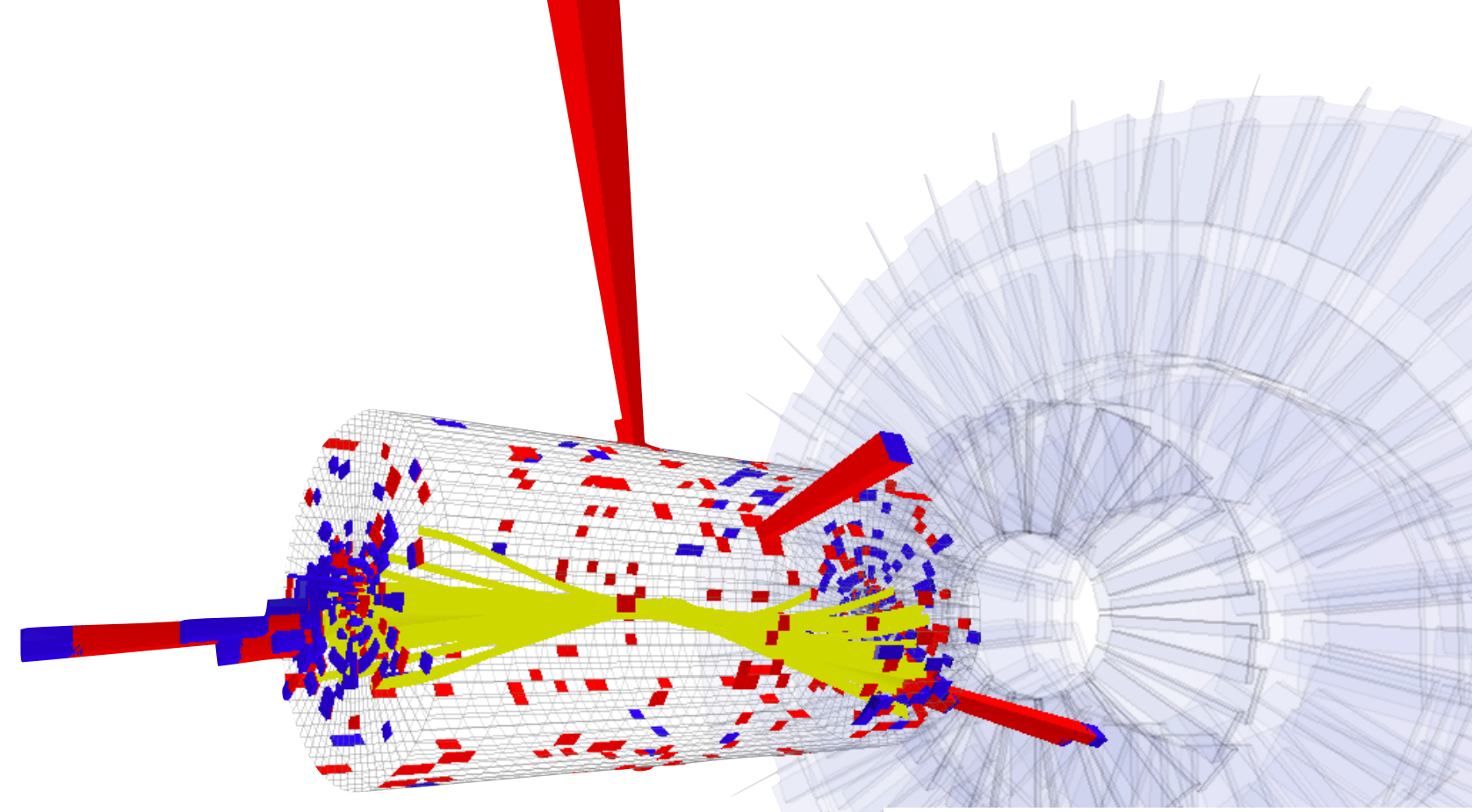
Dalla musica ai buchi neri: la fisica delle onde

Giovanni Organtini

DIPARTIMENTO DI FISICA



SAPIENZA
UNIVERSITÀ DI ROMA





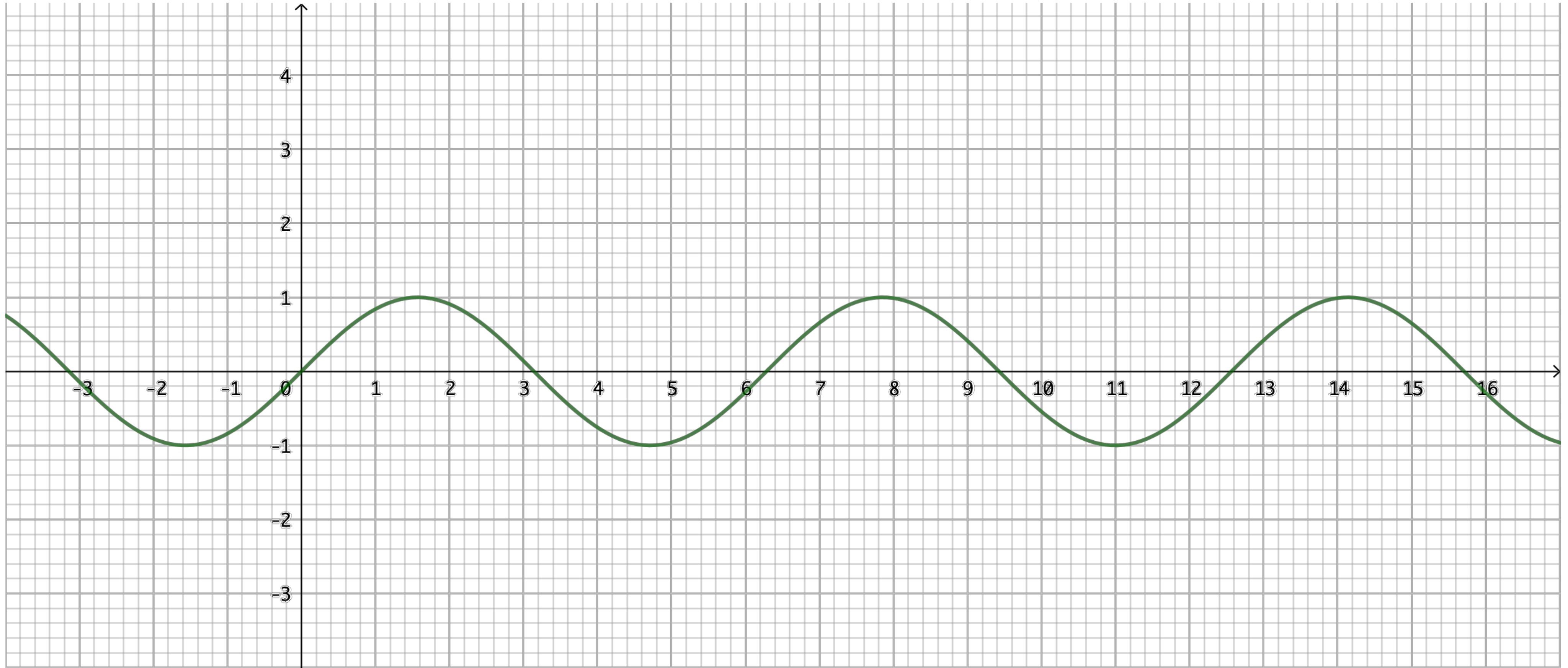
Suono

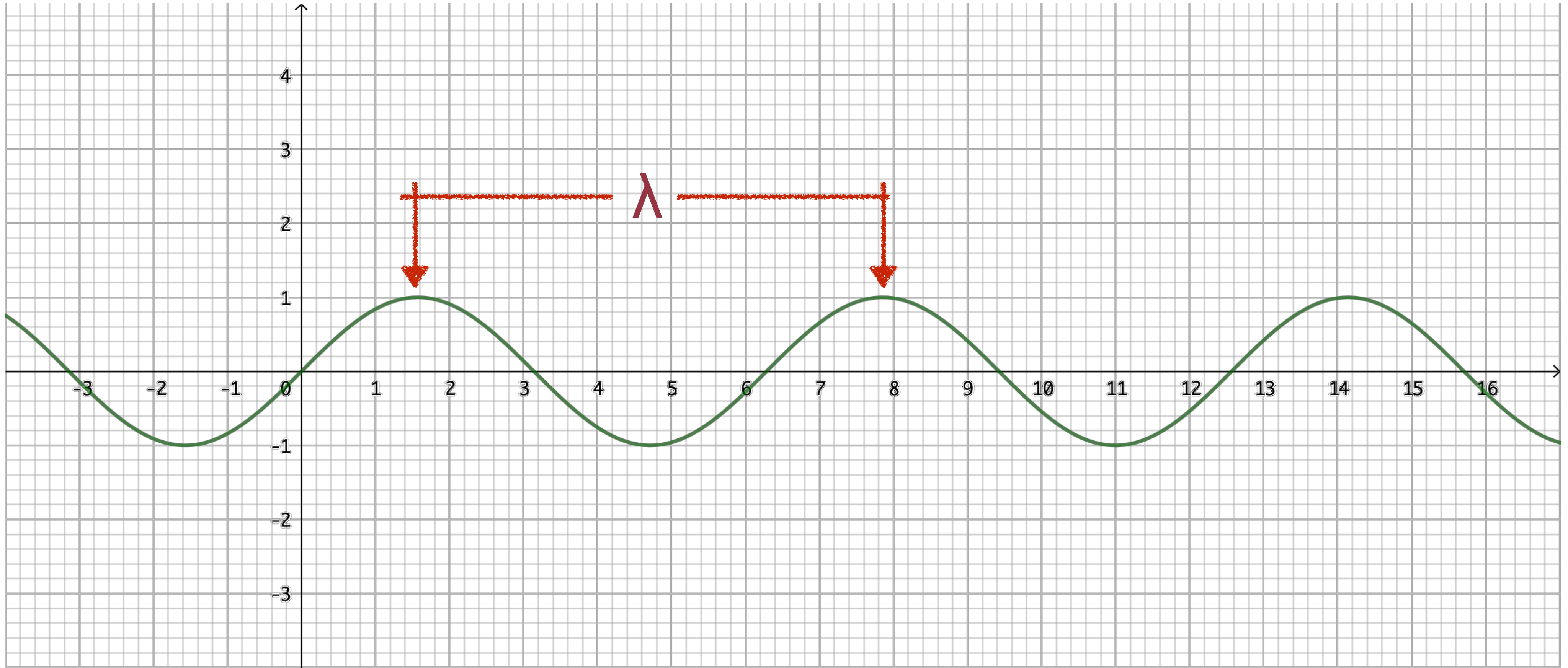
Suono

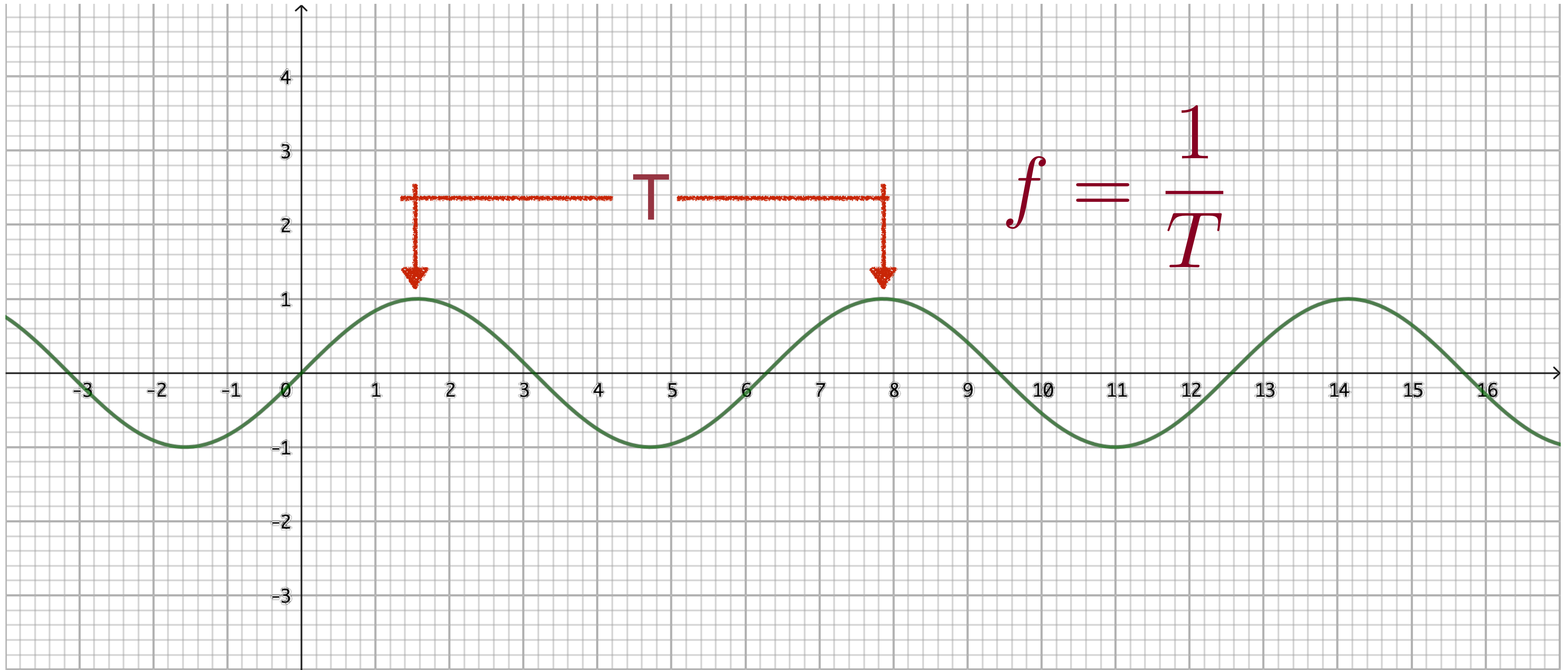
→ onda

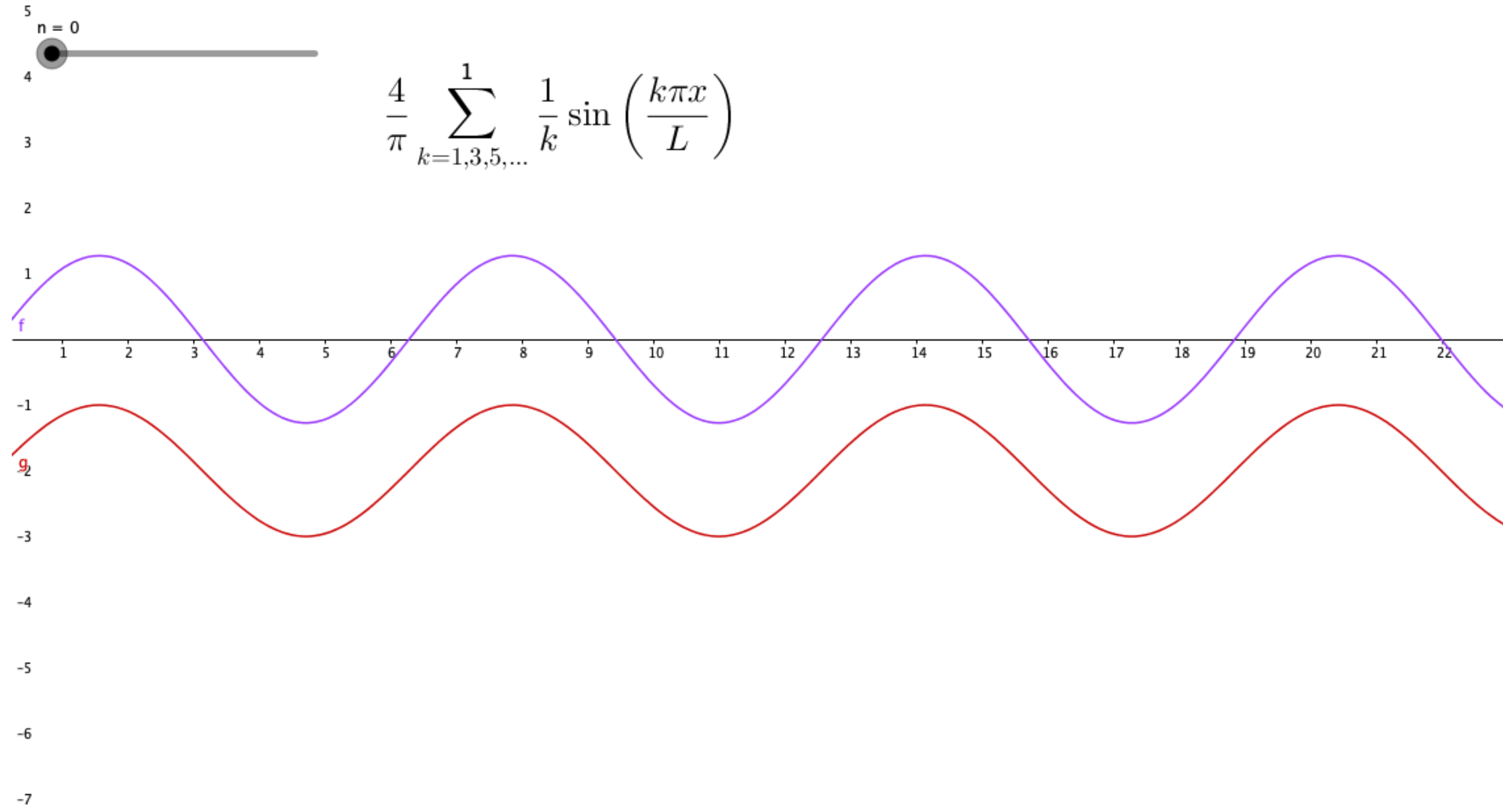


*Il diffondersi poi ampiamente
l'increspamento del mezzo intorno al
corpo risonante, apertamente si vede nel
far sonare il bicchiere, dentro 'l quale sia
dell'acqua, fregando il polpastrello del
dito sopra l'orlo; imperò che l'acqua
contenuta con regolatissimo ordine si
vede andar ondeggiando: e meglio
ancora si vedrà l'istesso effetto fermando
il piede del bicchiere nel fondo di
qualche vaso assai largo, nel quale sia
dell'acqua sin presso all'orlo del
bicchiere; che parimente, facendolo
risonare con la confricazione del dito, si
vedranno gl'increspamenti nell'acqua
regolatissimi, e con gran velocità
spargersi in gran distanza intorno al
bicchiere*











microphone

barometer

gyroscope

accelerometer

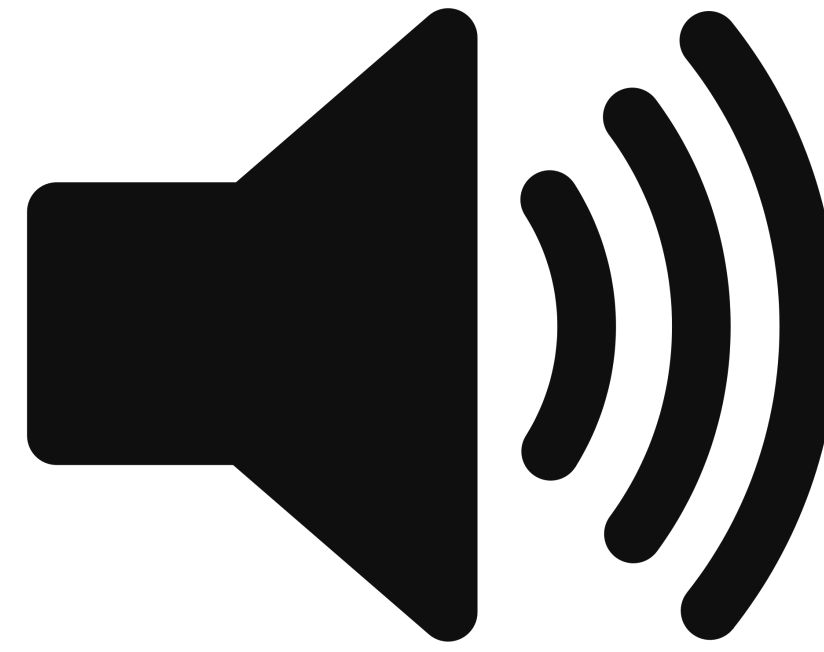
magnetometer

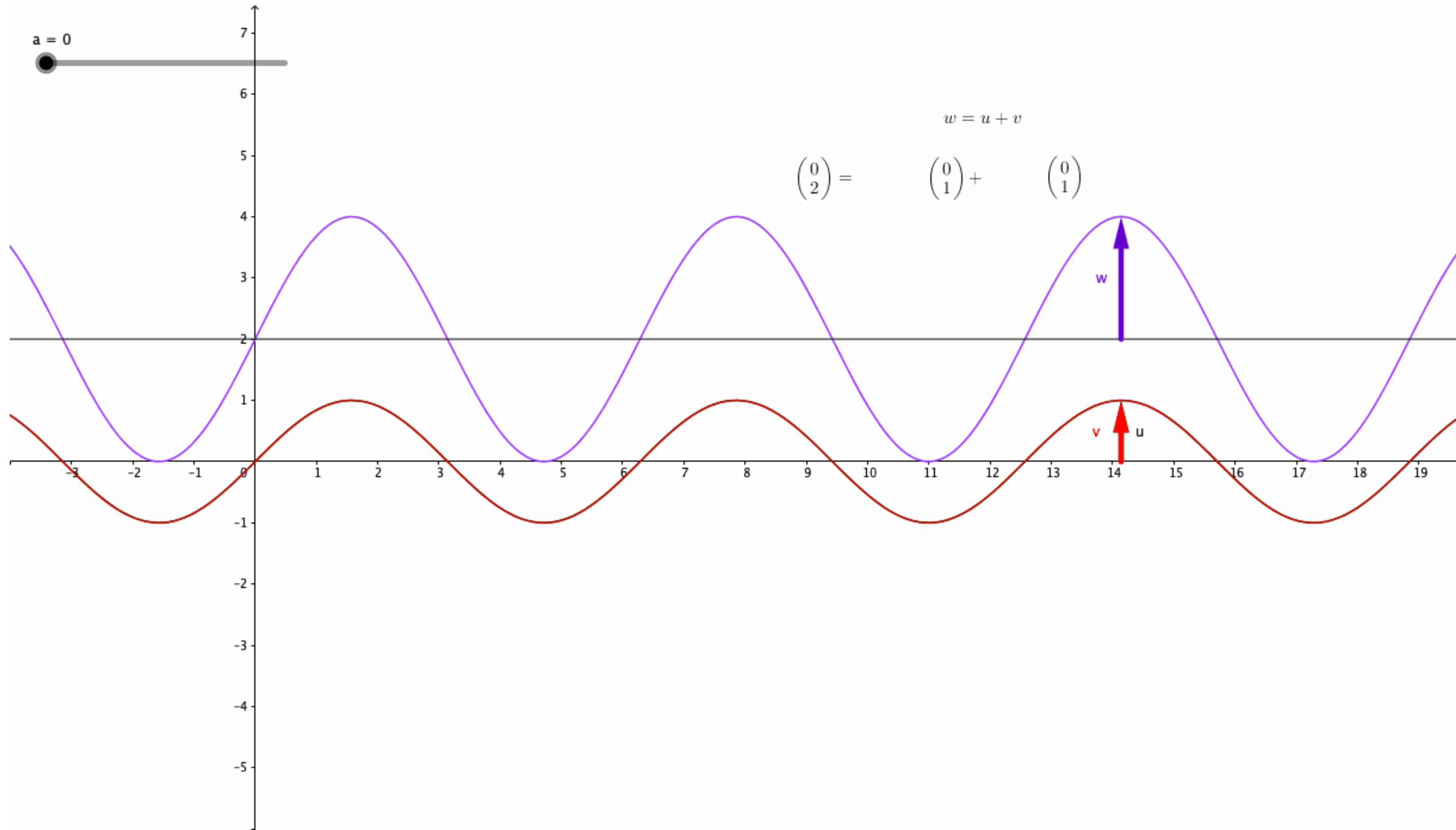
light sensor

phyphox
physical phone experiments

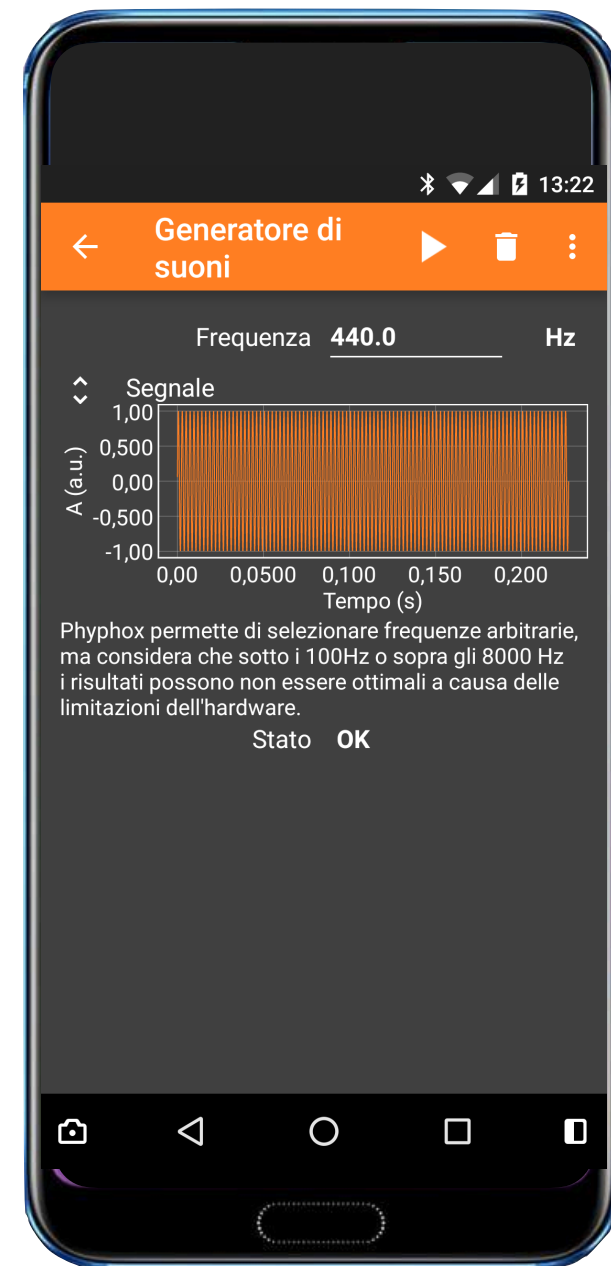
your phone is a lab

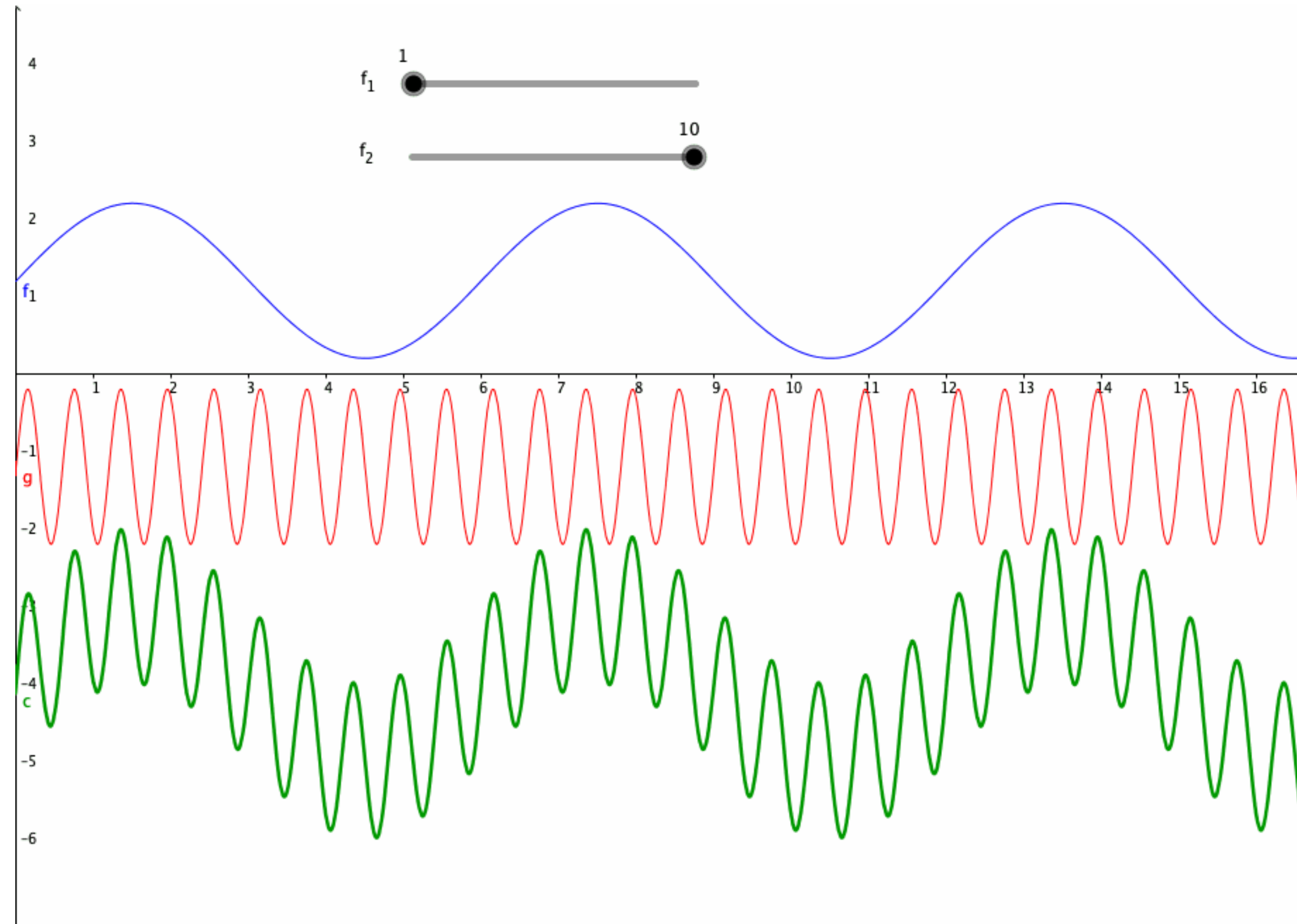
The screenshot shows a web browser window with the URL `onlinetonegenerator.com`. The page title is "Online Tone Generator" and it includes a navigation menu on the left with options like "Pitch Shifter", "Time Stretcher", "Voice Generator", etc. The main content area features a text input field containing "440 Hertz", a "Play" button, a "Stop" button, and a "Save" button. Below these are a volume slider and two radio buttons for selecting the waveform: "Sine" (selected) and "Square".

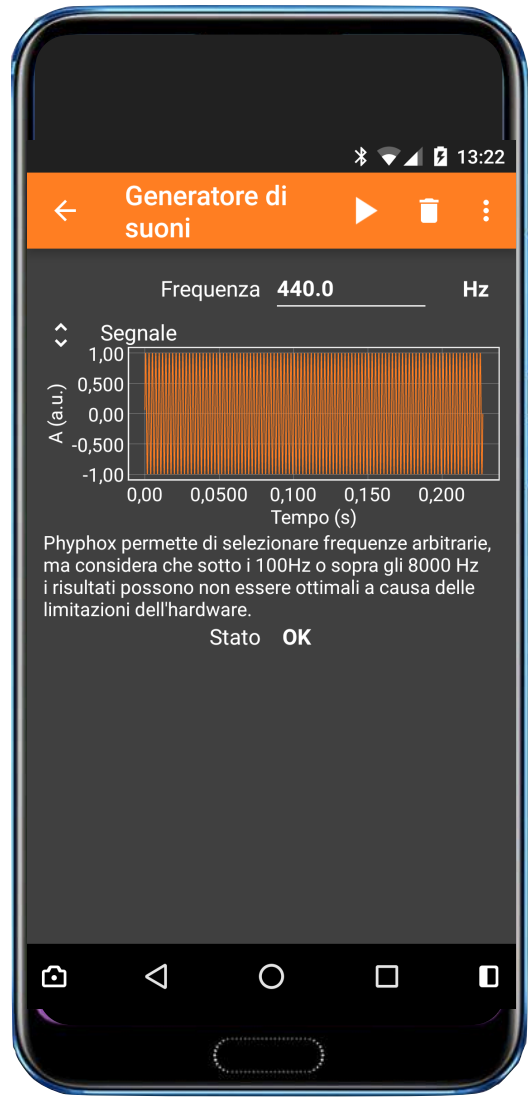




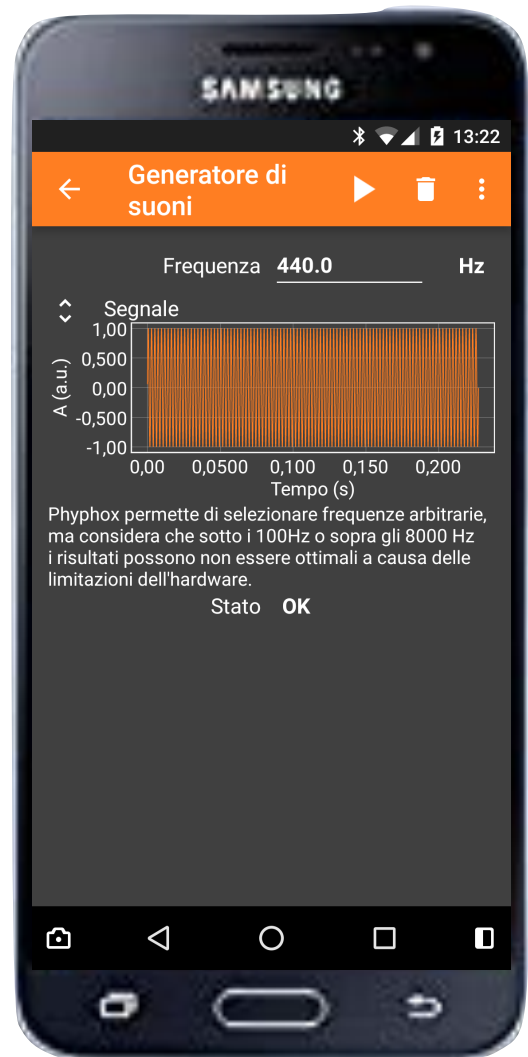
$$f = 440\text{Hz} \rightarrow \lambda = 77\text{ cm}$$



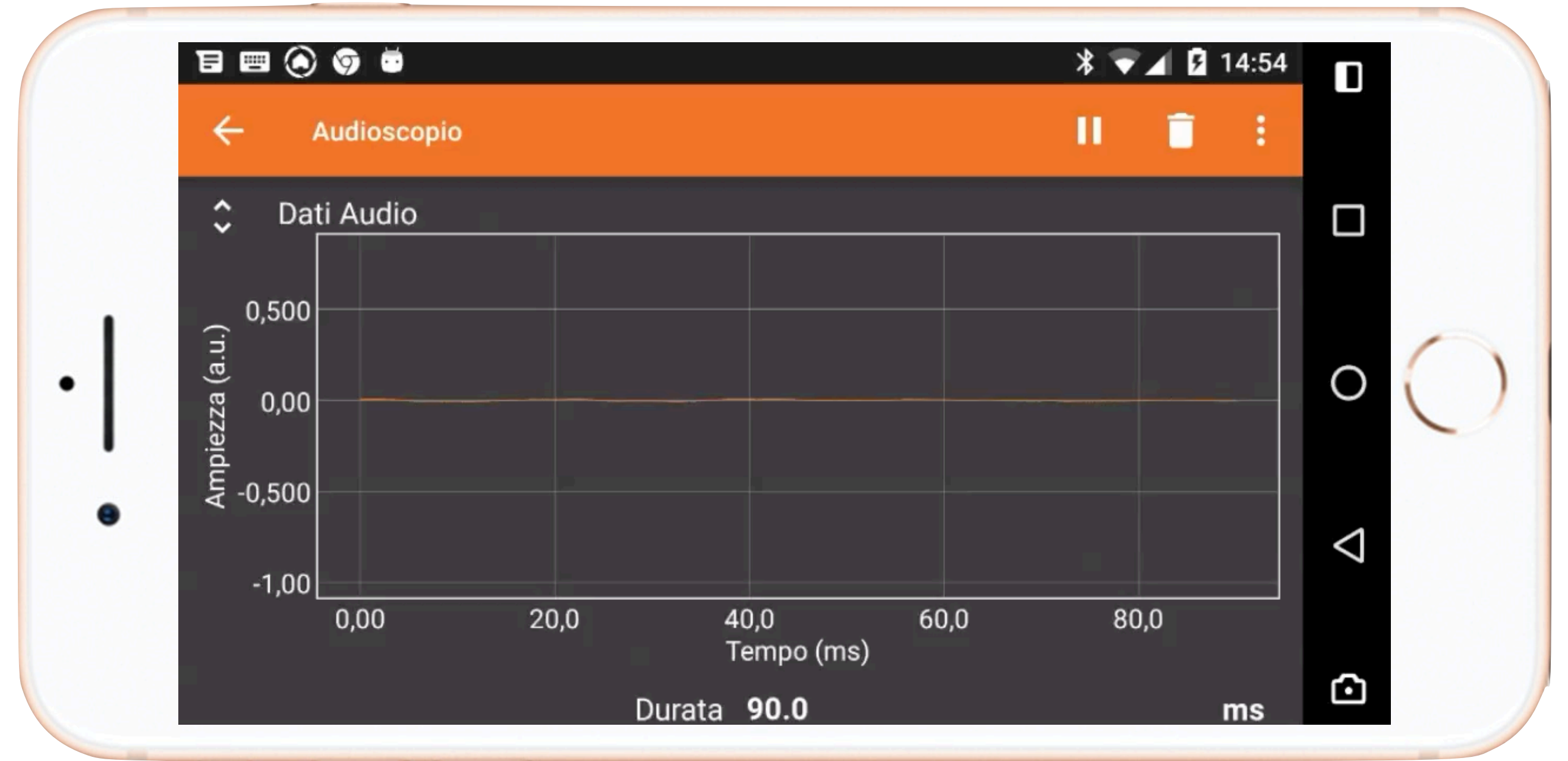


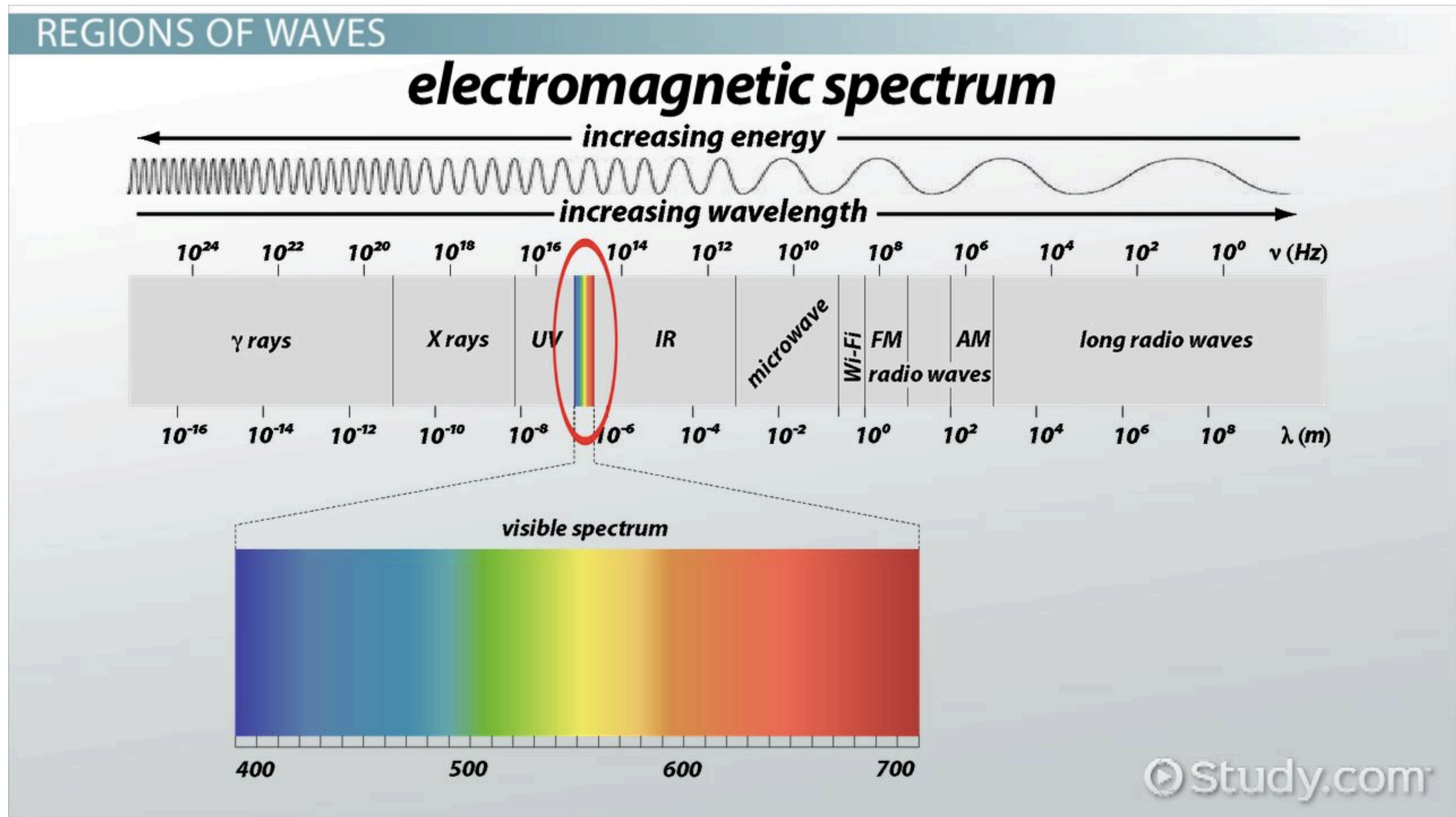


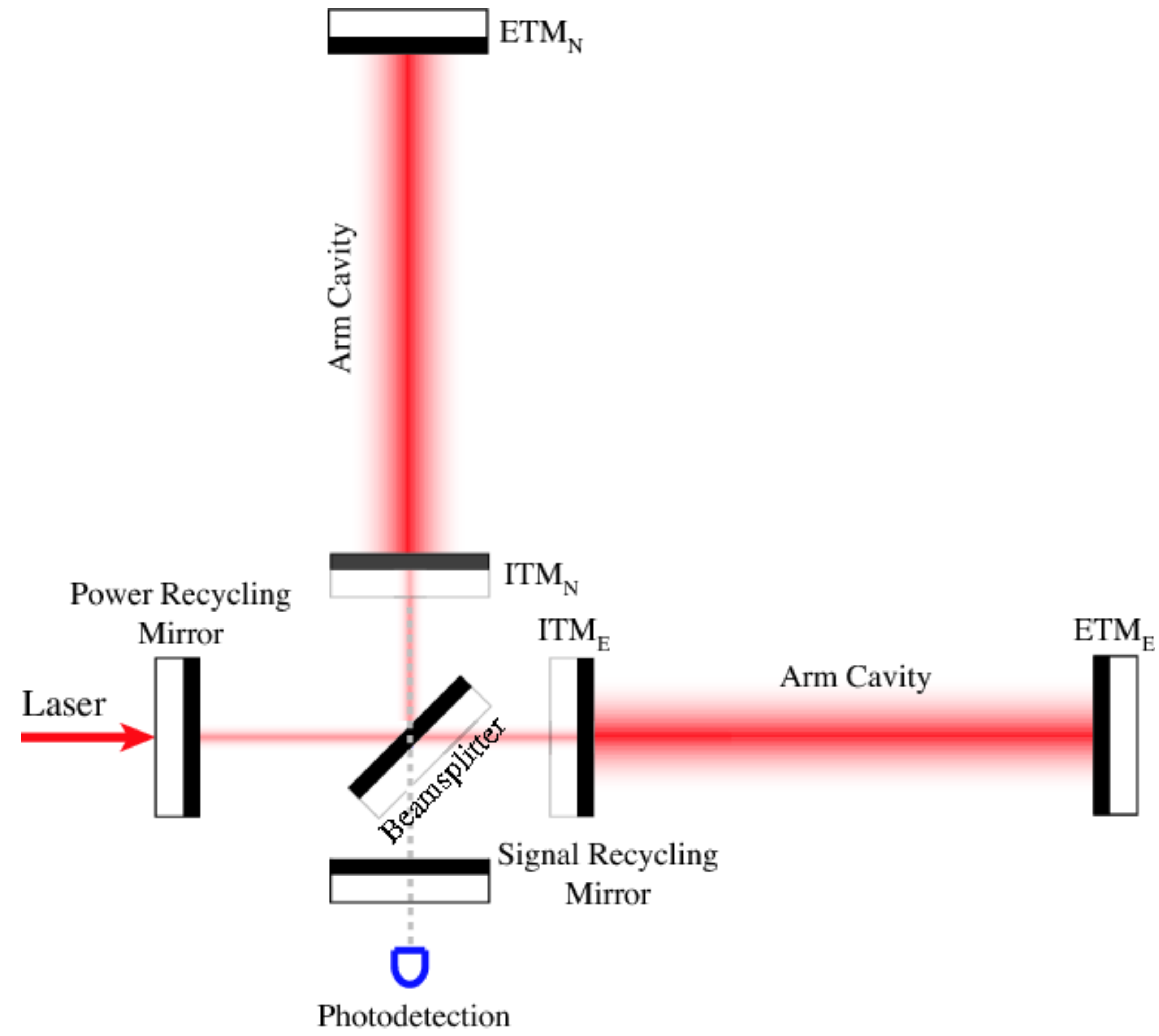
$$\lambda_1 = 440 \text{ Hz}$$



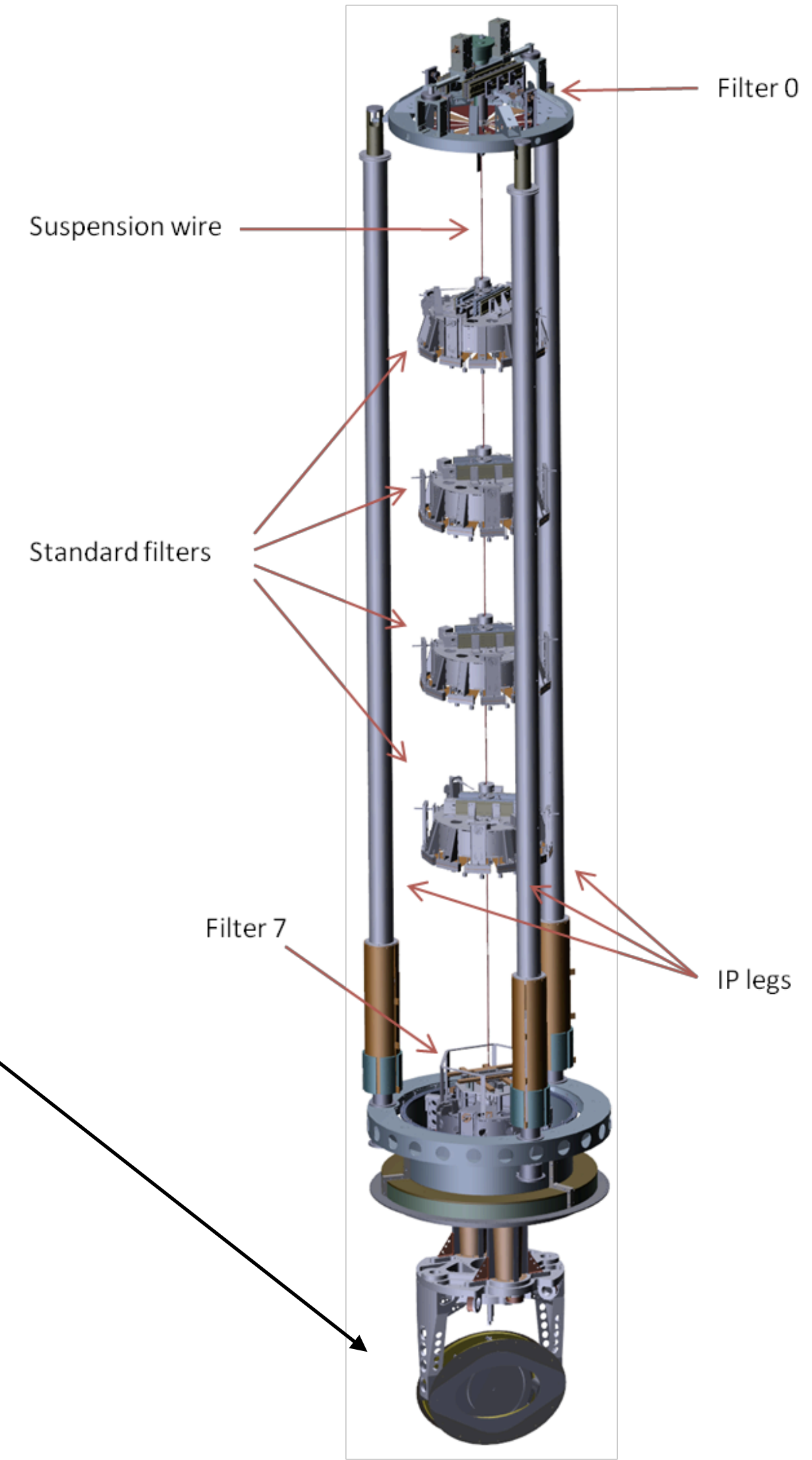
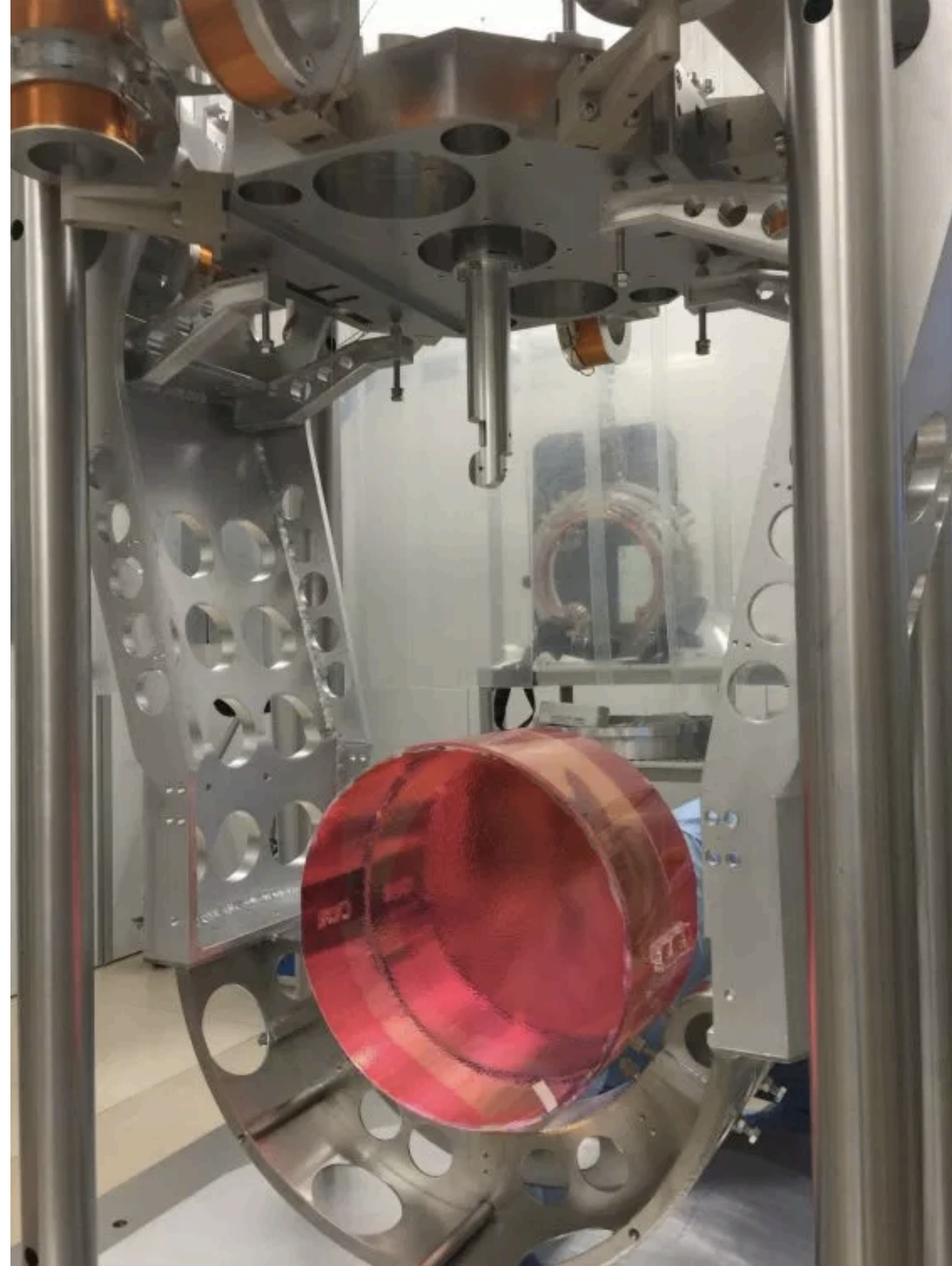
$$\lambda_2 = 390 \text{ Hz}$$

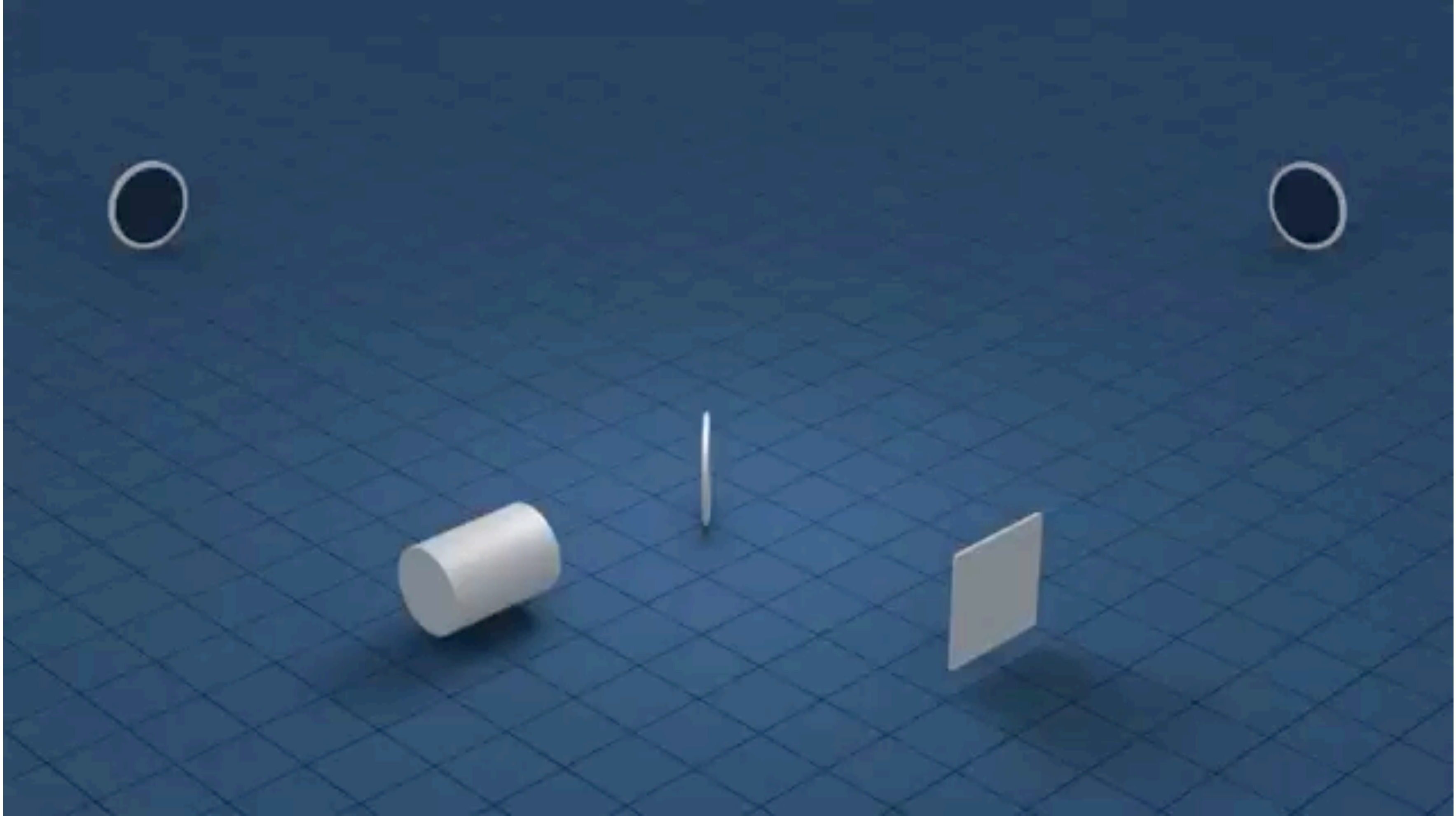


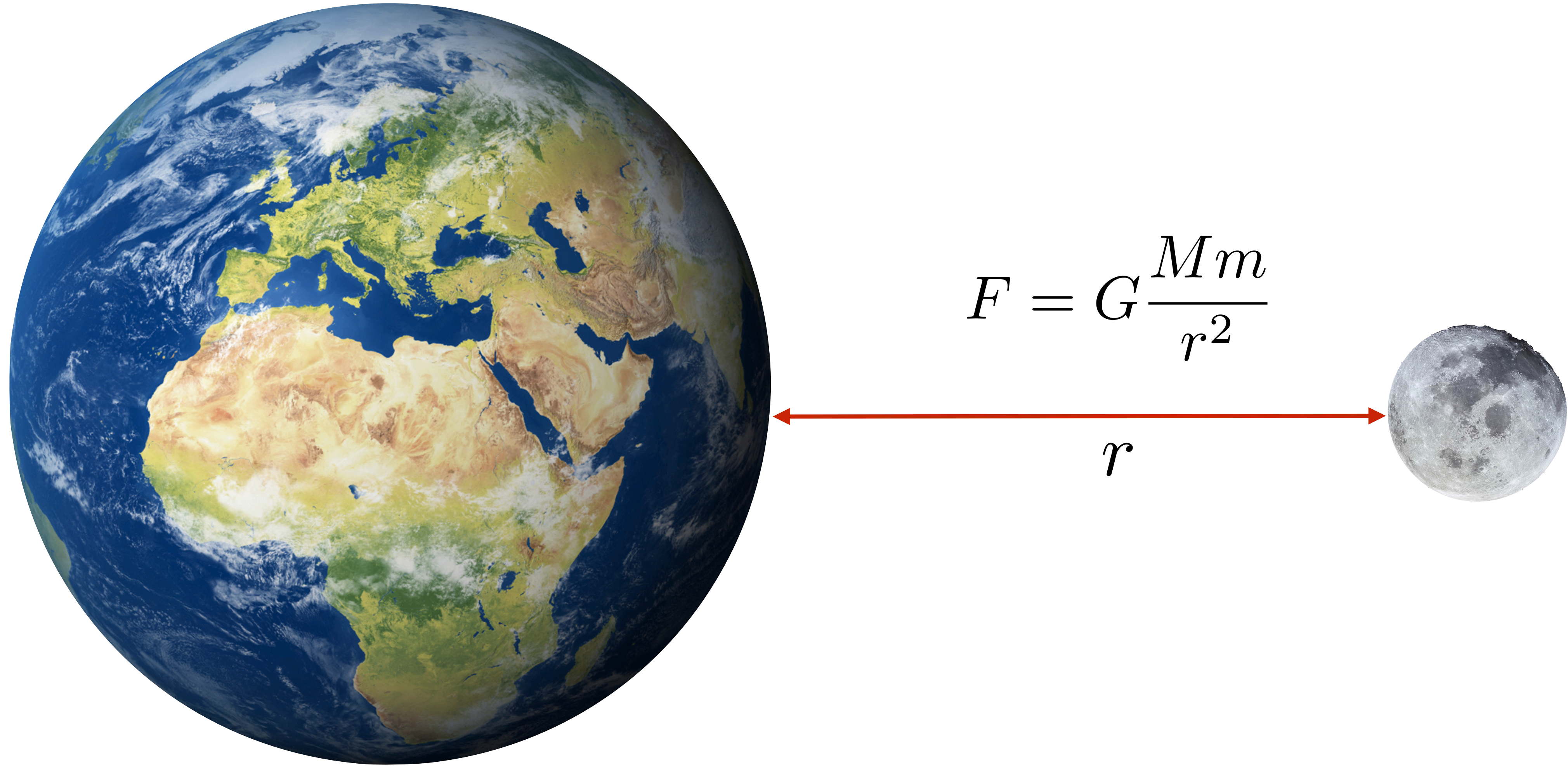


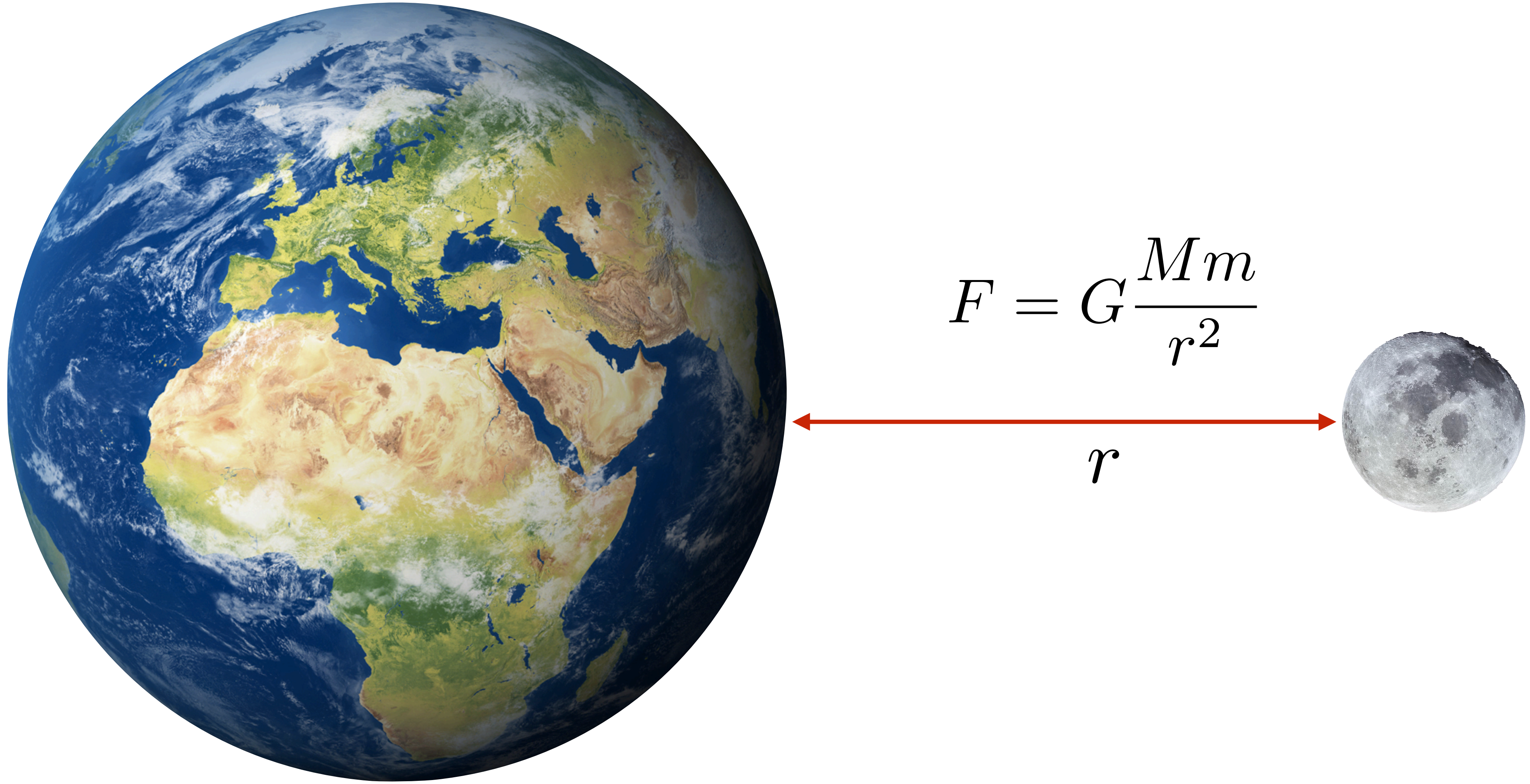


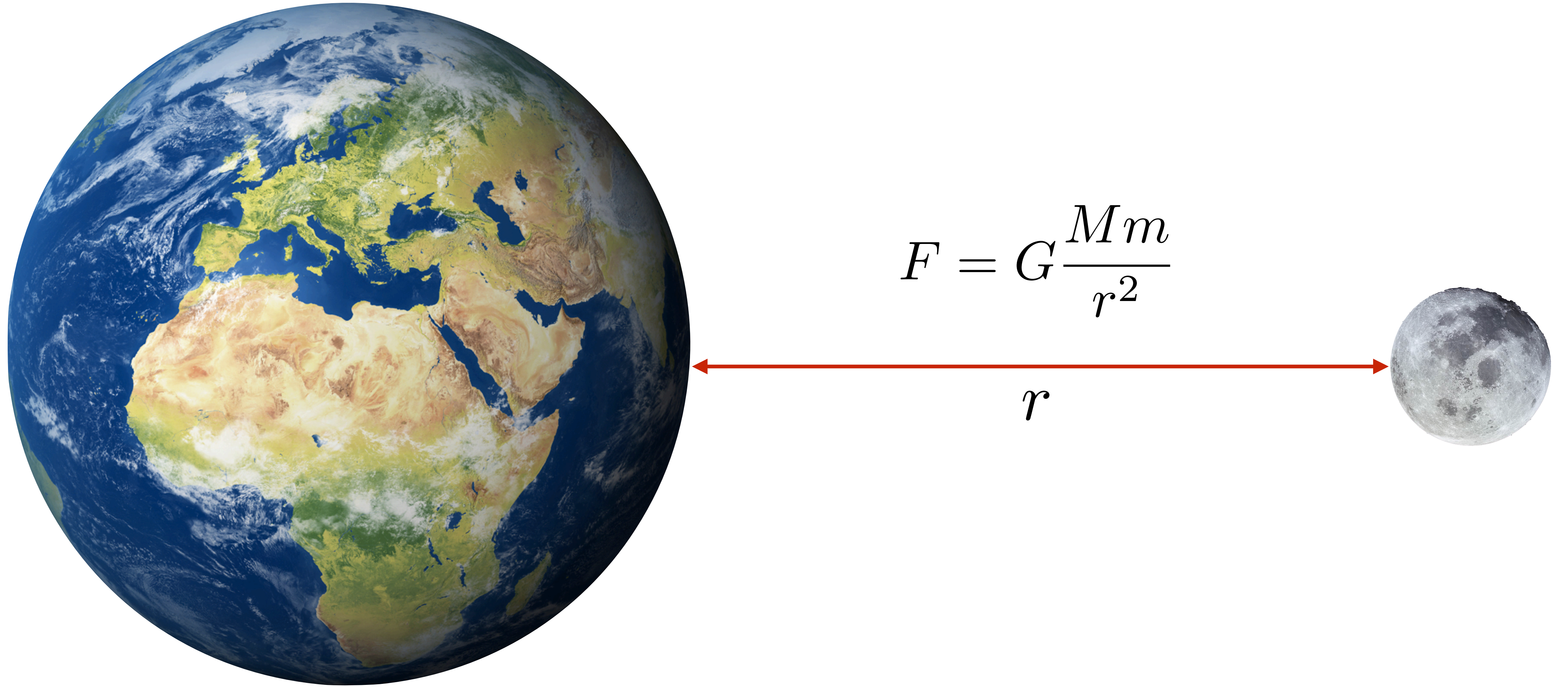


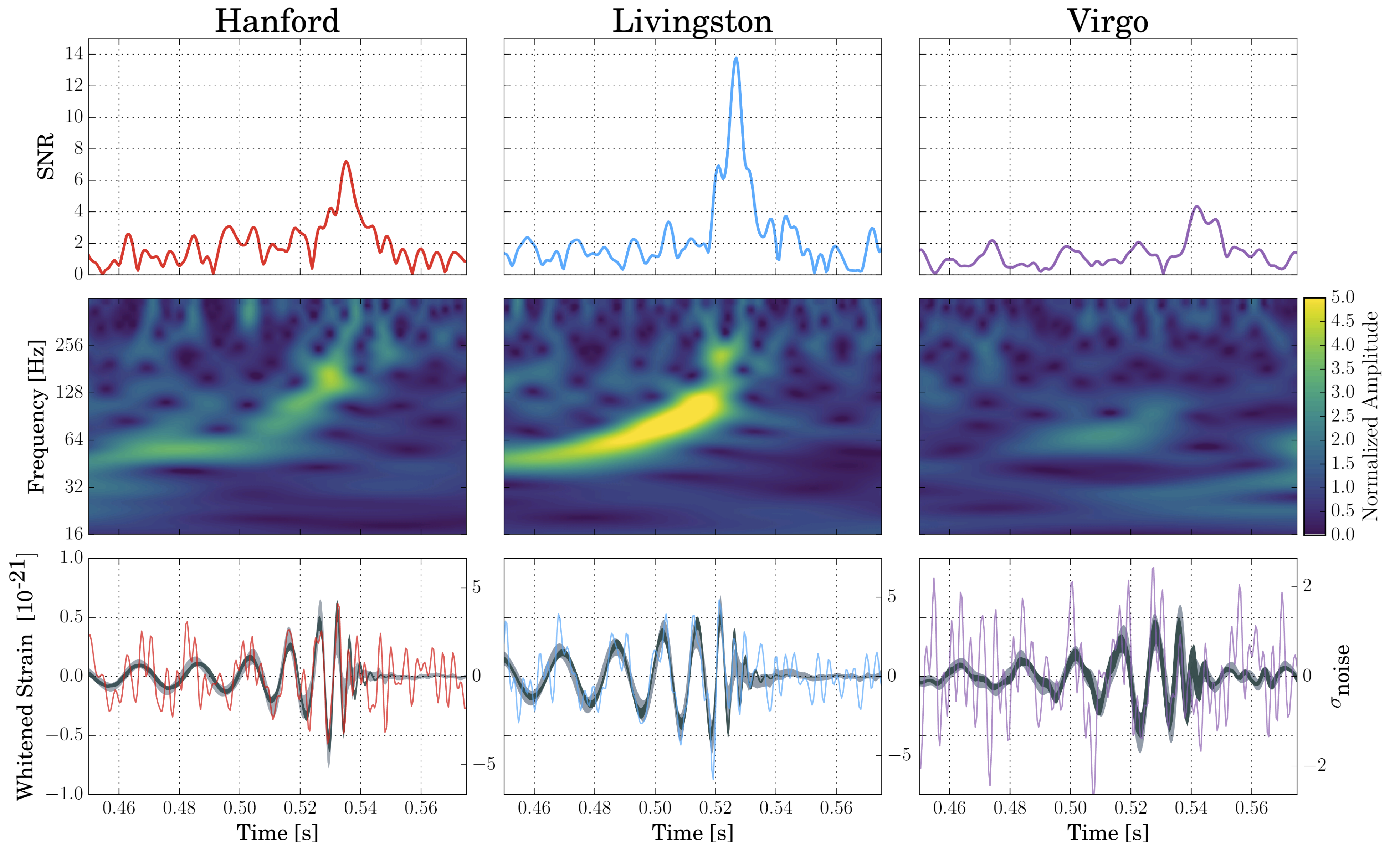




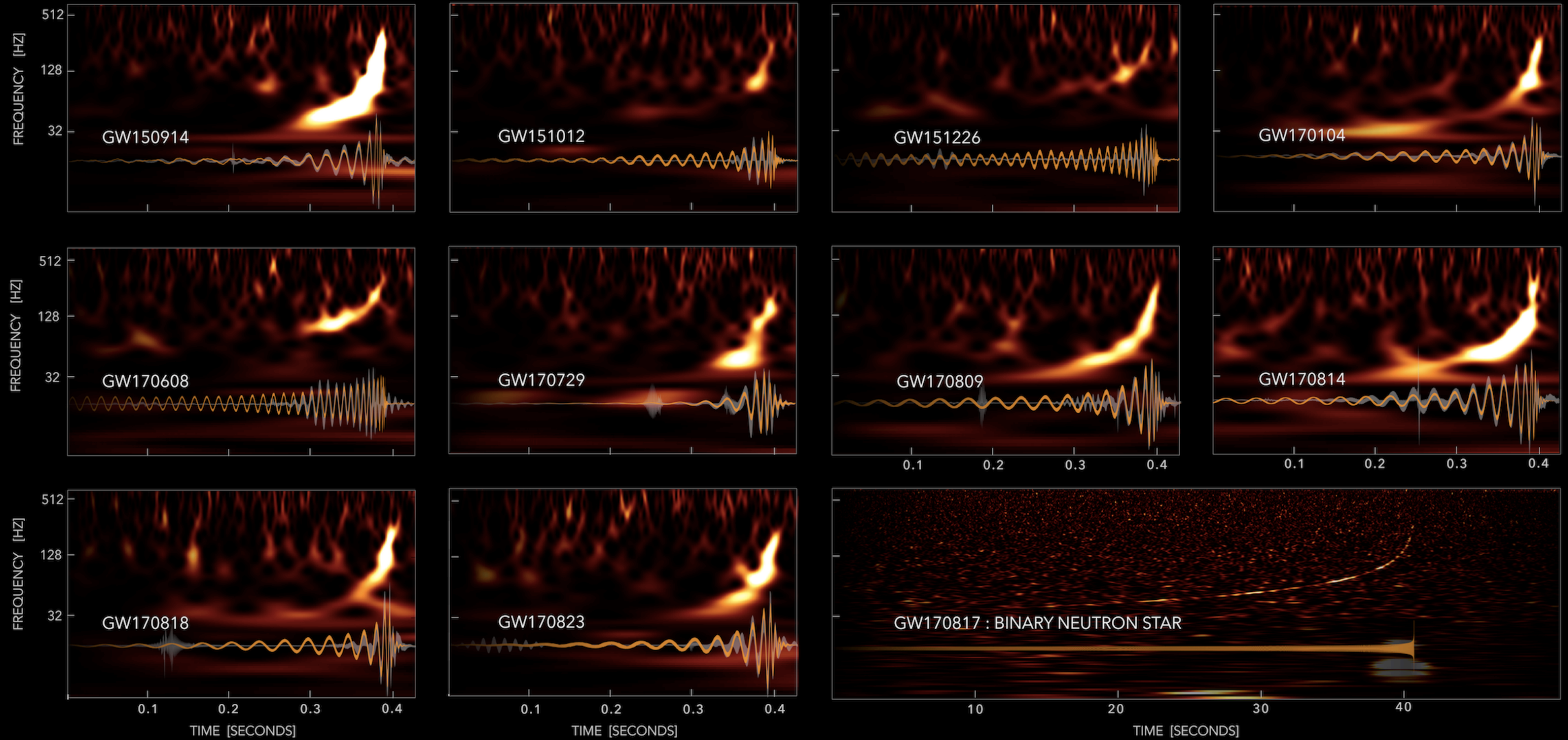








GRAVITATIONAL-WAVE TRANSIENT CATALOG-1

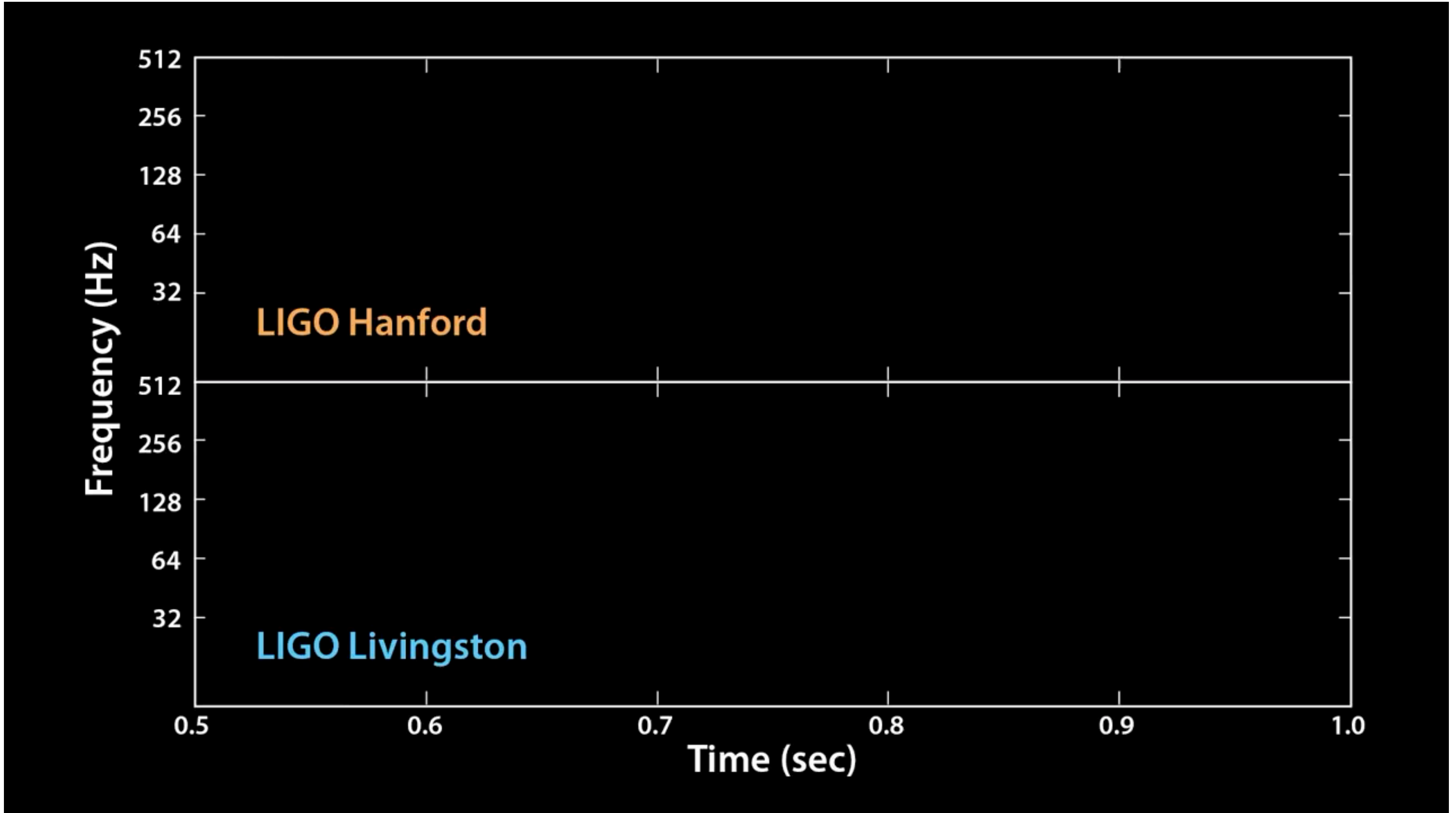


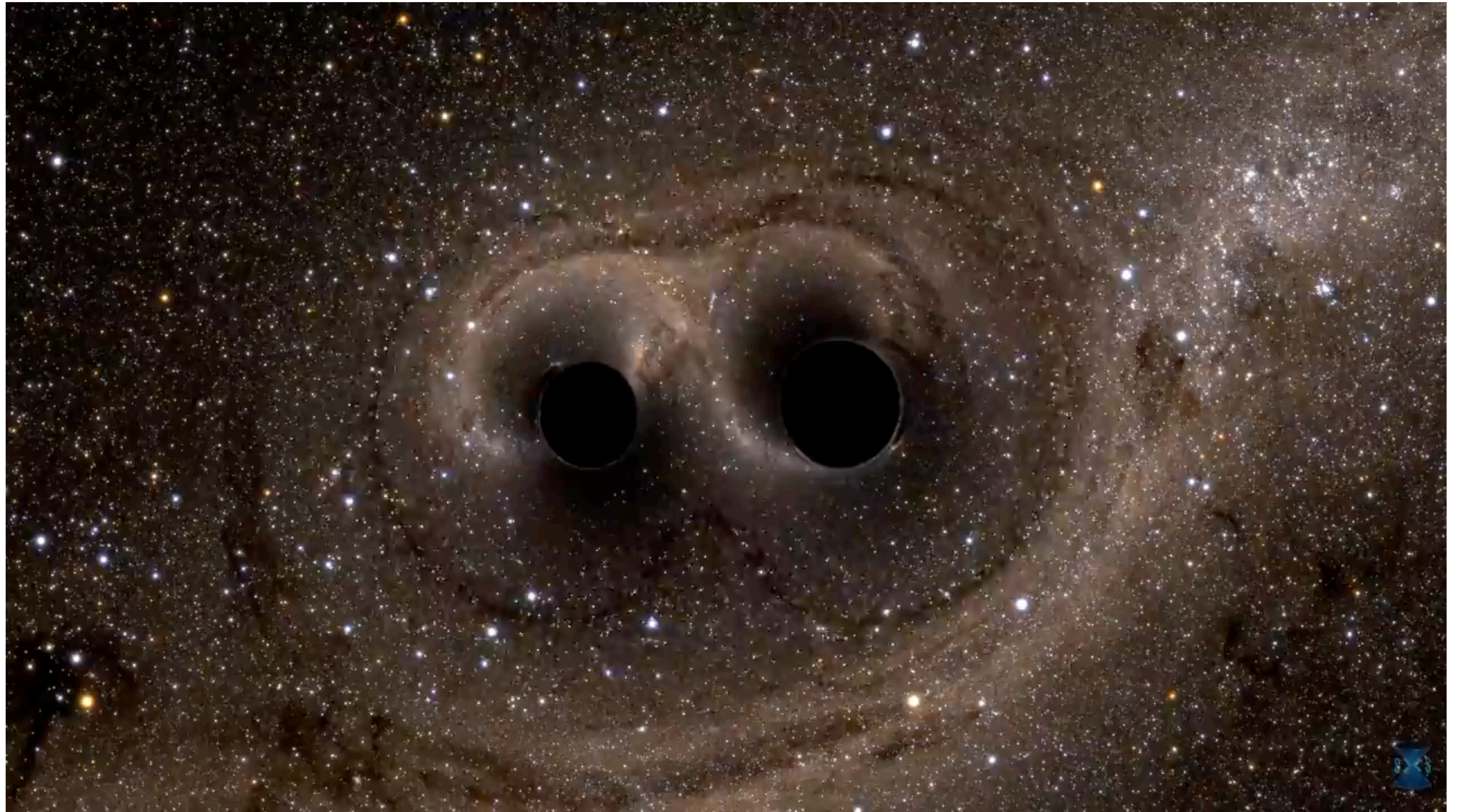
LIGO-VIRGO DATA: [HTTPS://DOI.ORG/10.7935/82H3-HH23](https://doi.org/10.7935/82H3-HH23)

WAVELET (UNMODELED)

EINSTEIN'S THEORY

S. GHONGE, K. JANI | GEORGIA TECH





Organzi@