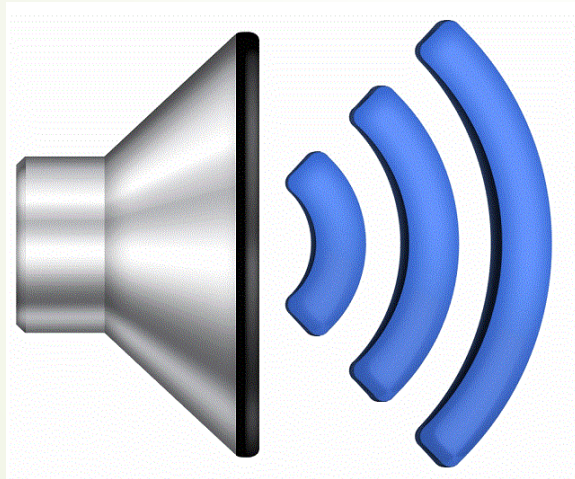


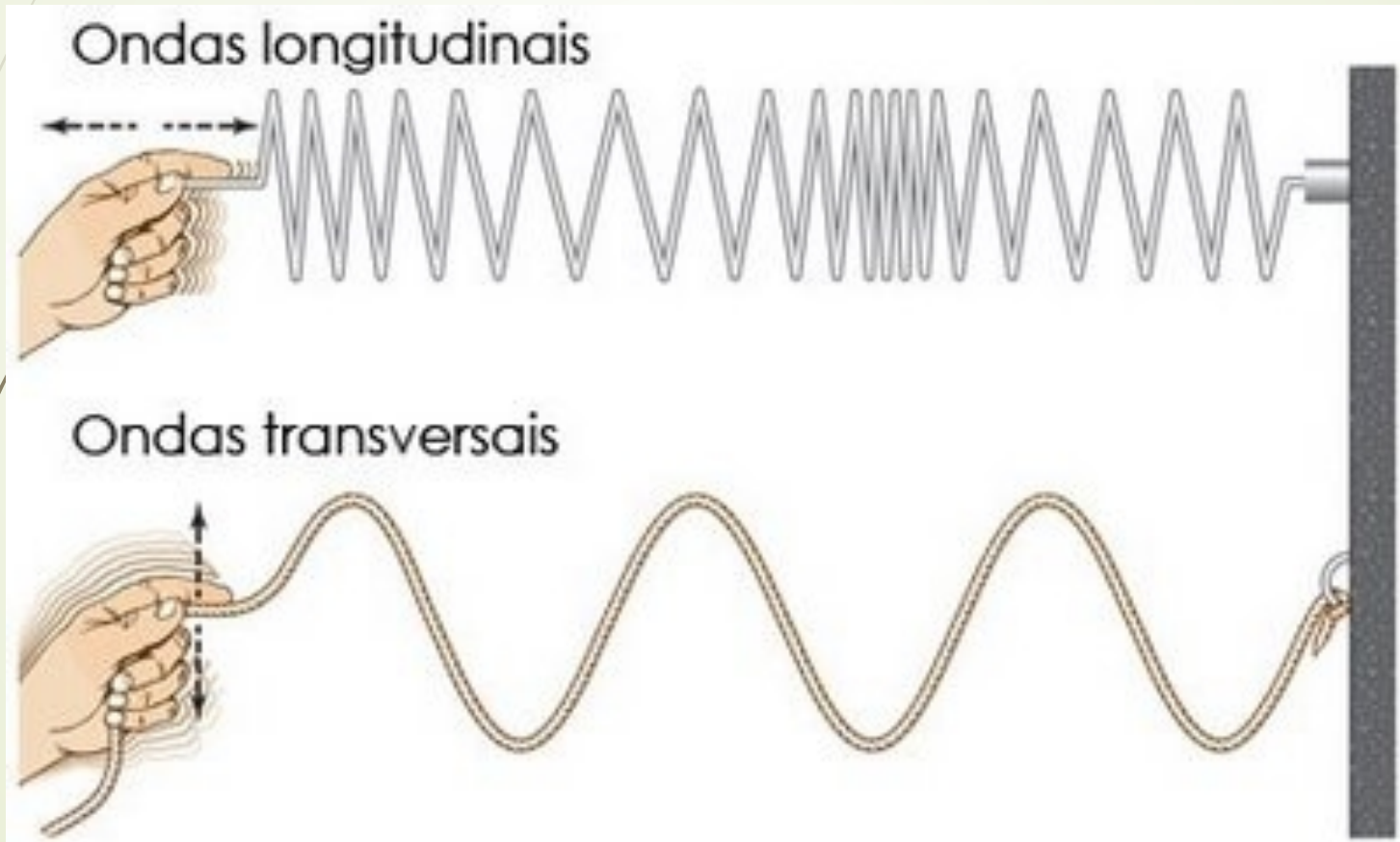
Natureza do Som



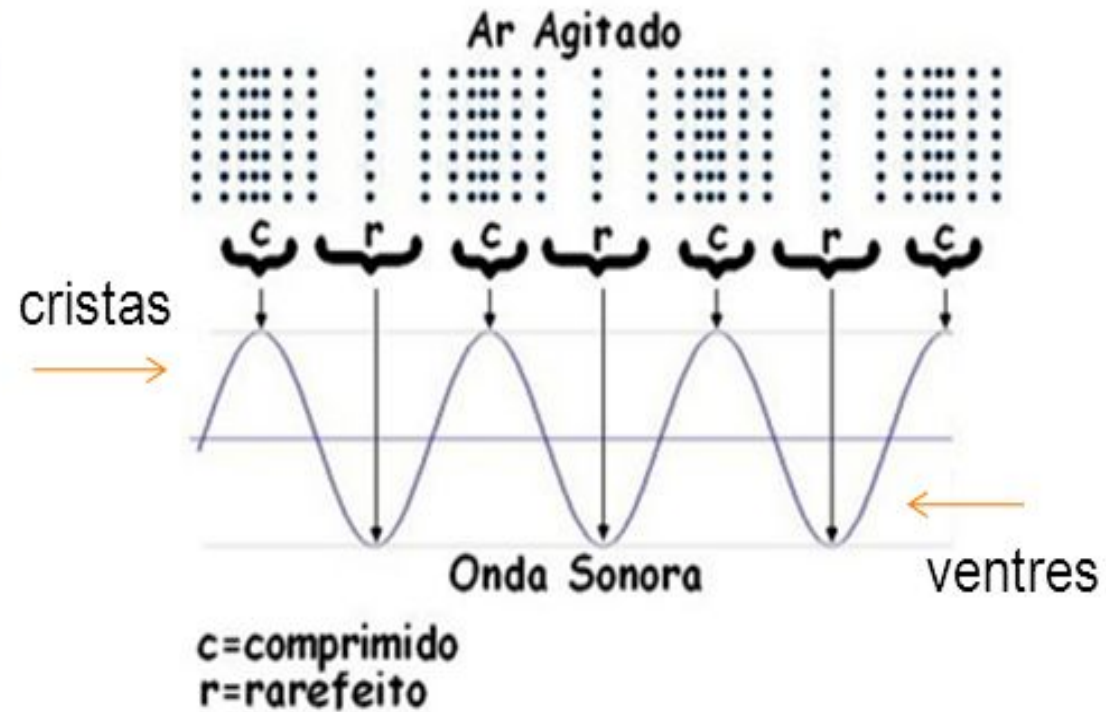
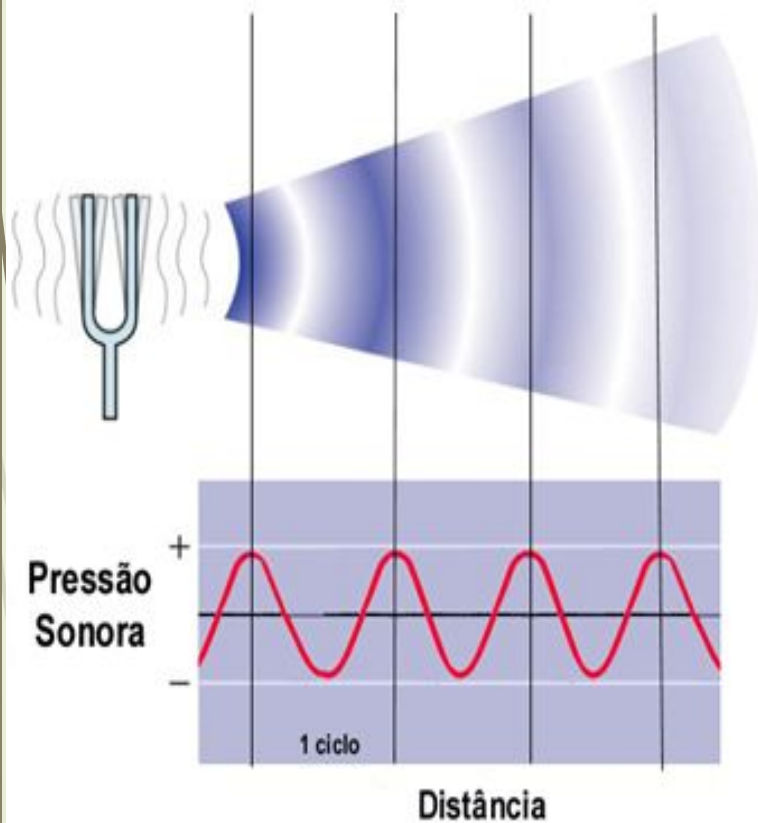
Alex Sandro de Lima
William Brozio

Onda Longitudinal (sonora) x Transversal

Diapasão

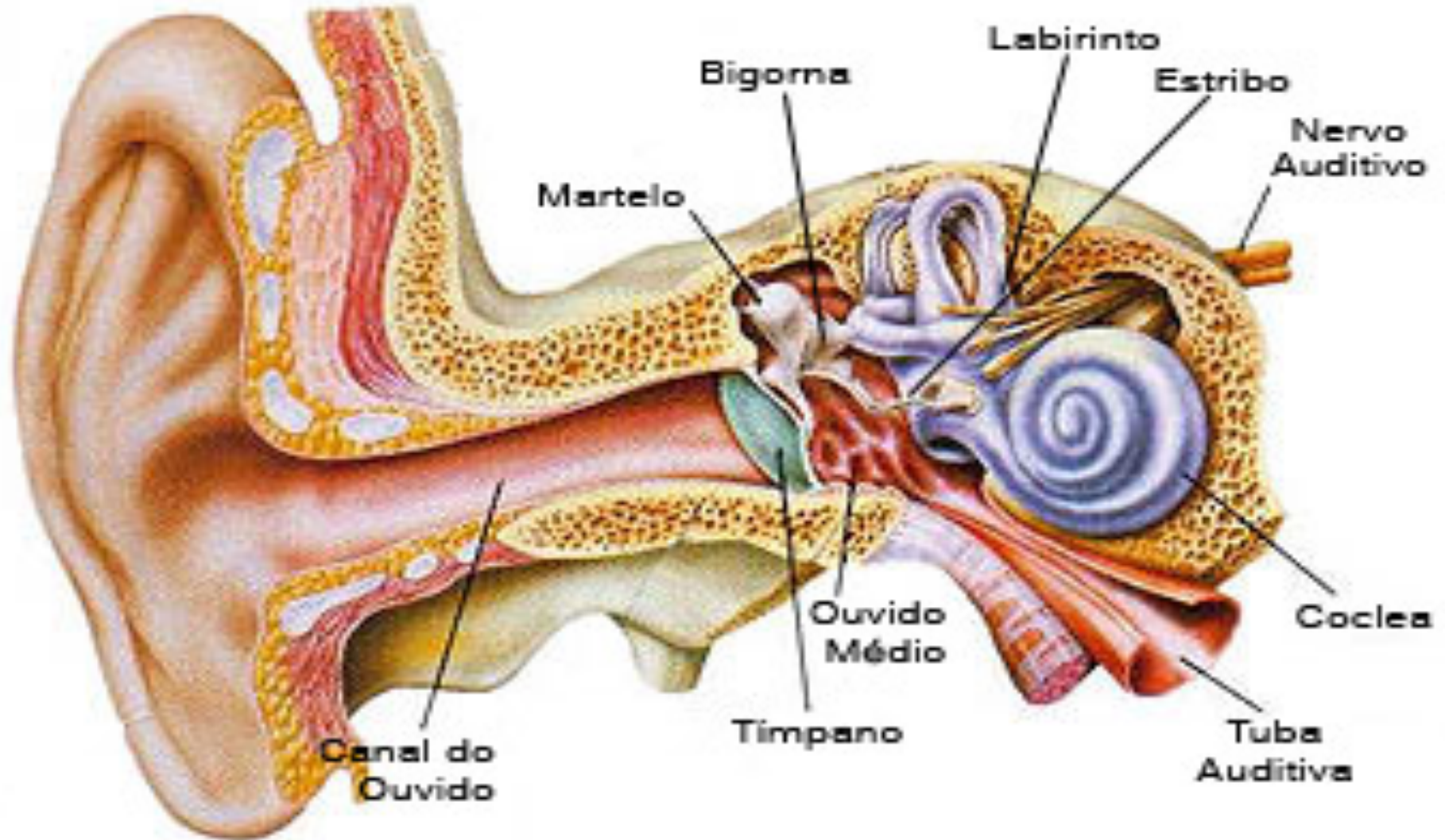


Ondas Sonoras

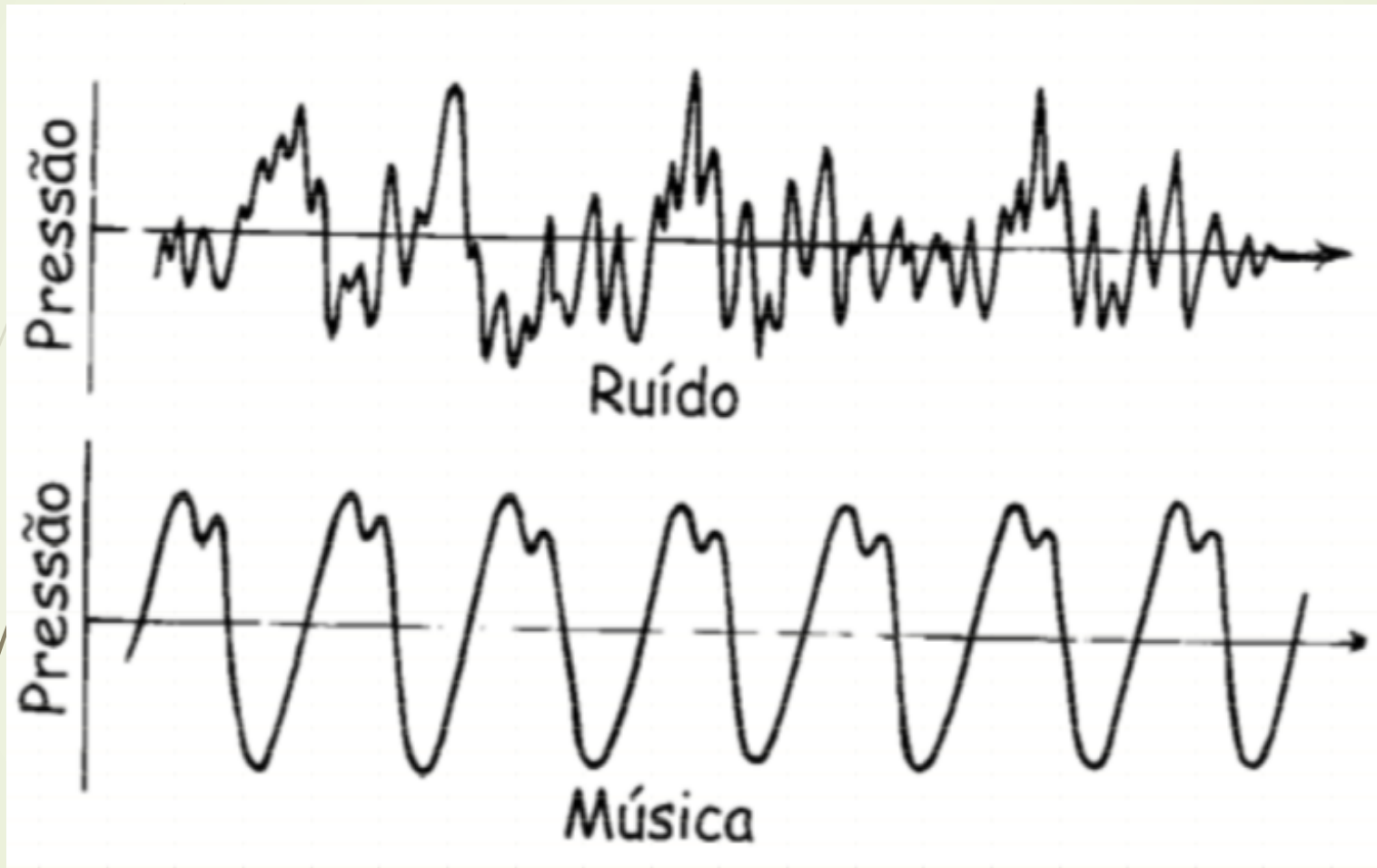


As ondas sonoras são também chamadas ondas de pressão.

Sistema auditivo



Ruído x Música

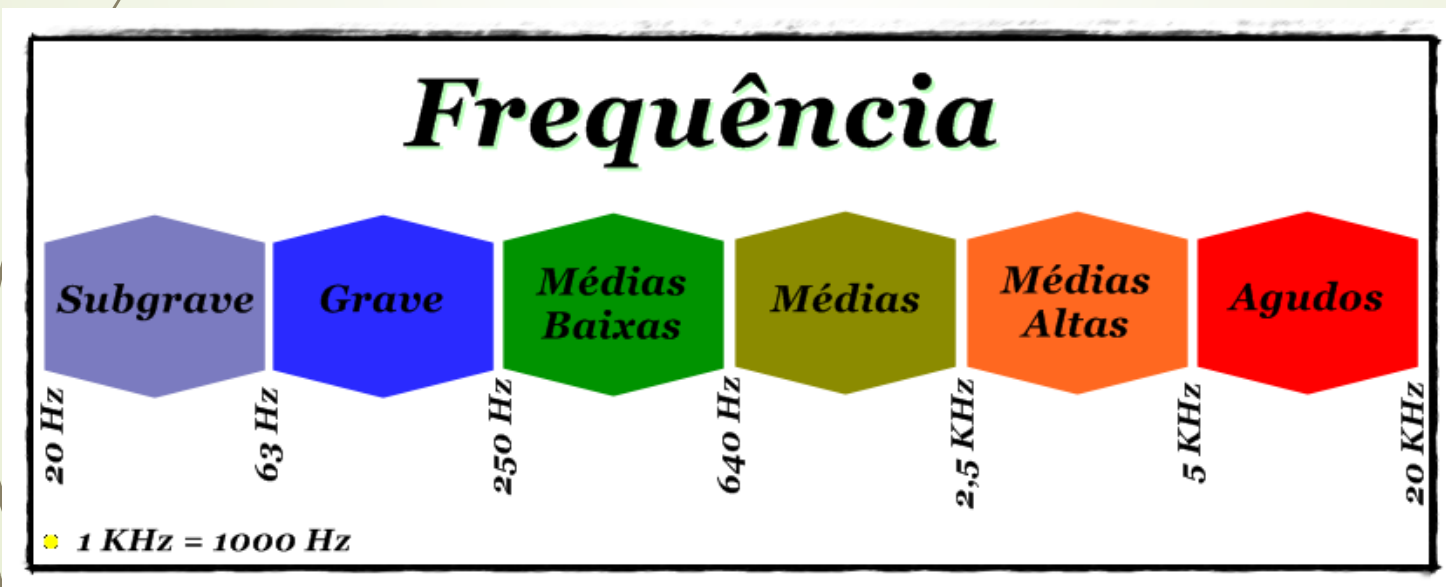
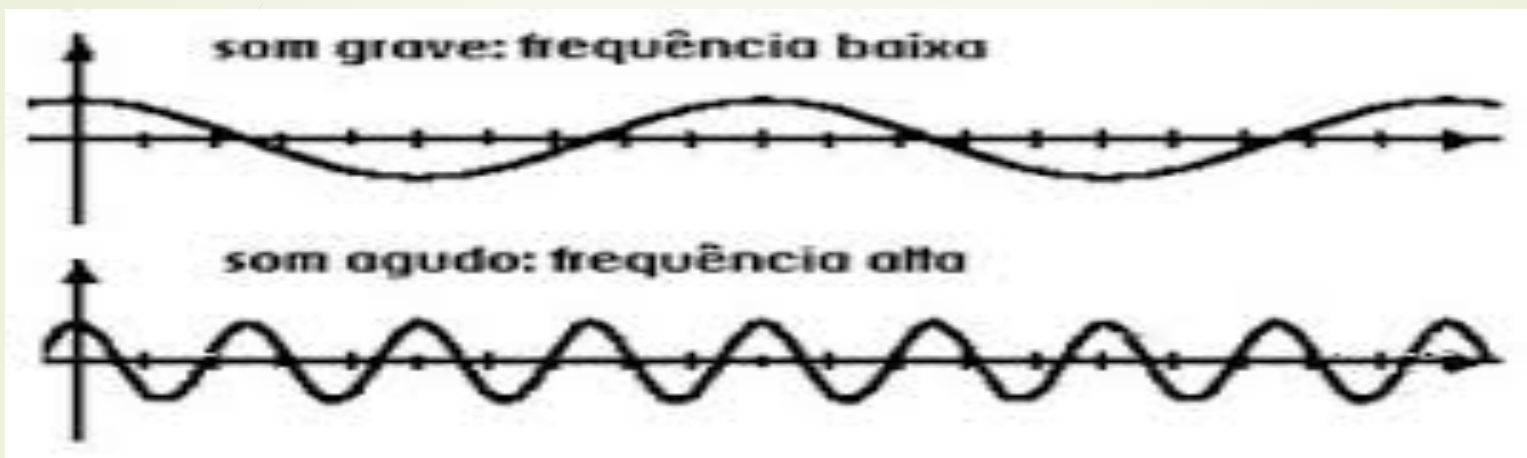


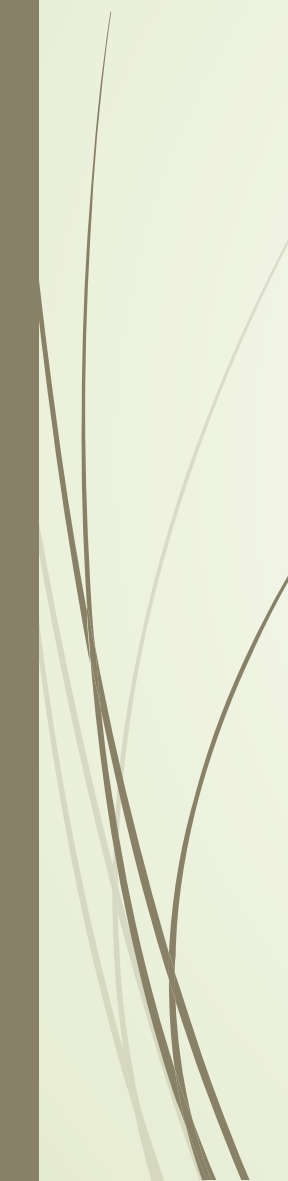
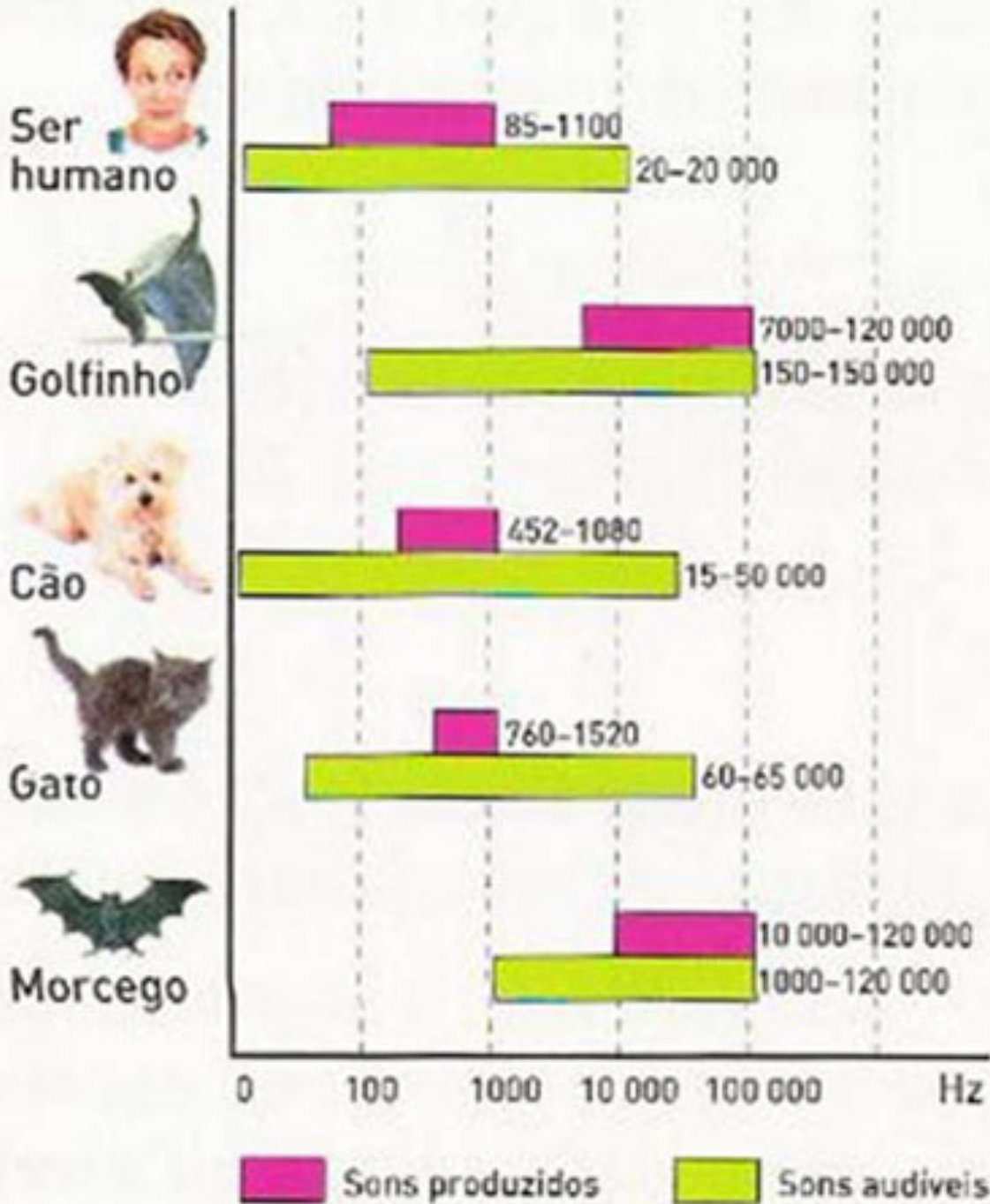


Propriedades do Som



Altura





Frequência x Escala musical

Escala maior - dó maior
dó ré mi fá sol lá si dó



lá si dó ré mi fá sol lá

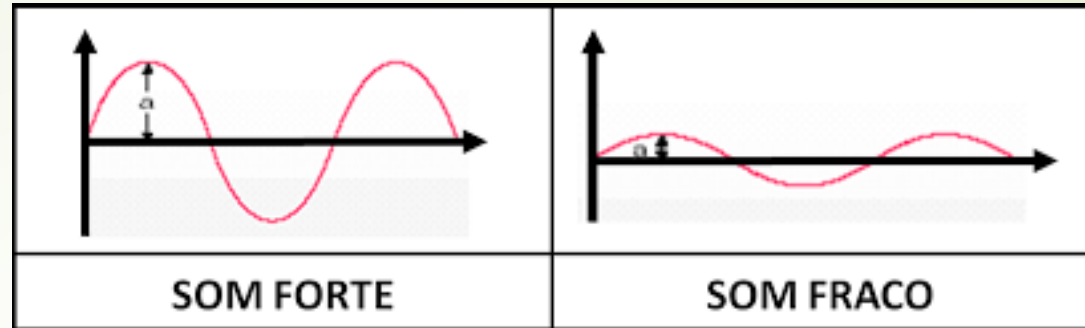
Escala menor relativa - lá menor

	Dó	Ré	Mi	Fá	Sol	Lá	Si
$\frac{4}{4}$	1	$\frac{9}{8}$	$\frac{5}{4}$	$\frac{4}{3}$	$\frac{3}{2}$	$\frac{5}{3}$	$\frac{15}{8}$

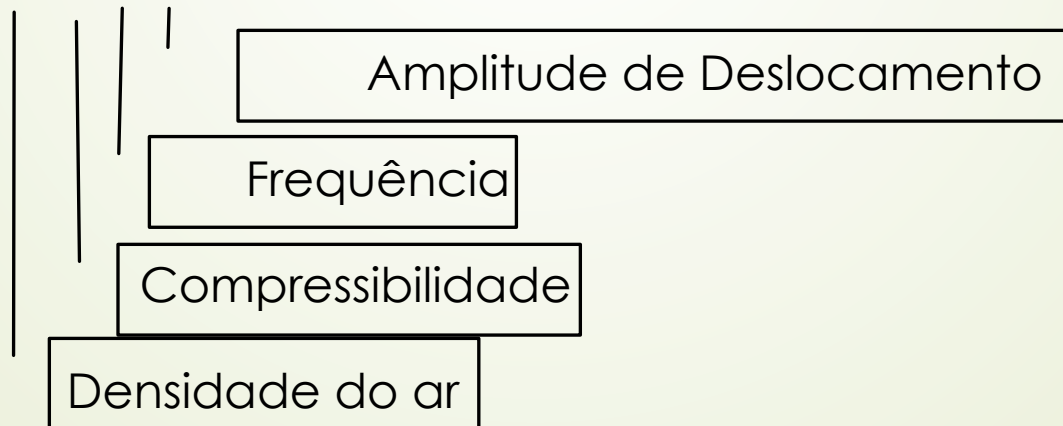
Notas	Frequência (Hz)
dó	264
ré	297
mi	330
fá	352
sol	396
lá	440
si	495
dó	528

Intensidade

$$I = \text{Potência} / \text{Área} \text{ [W/m}^2 \text{]}$$



$$I = \frac{1}{2} \cdot \rho \cdot B \cdot \omega^2 \cdot A^2$$



Escala Decibel

Limiar da audição : $I_0 = 10^{-12} \text{ W/m}^2$;

$$\beta = 10 \cdot \log \left(\frac{I}{I_0} \right)$$

Decibel

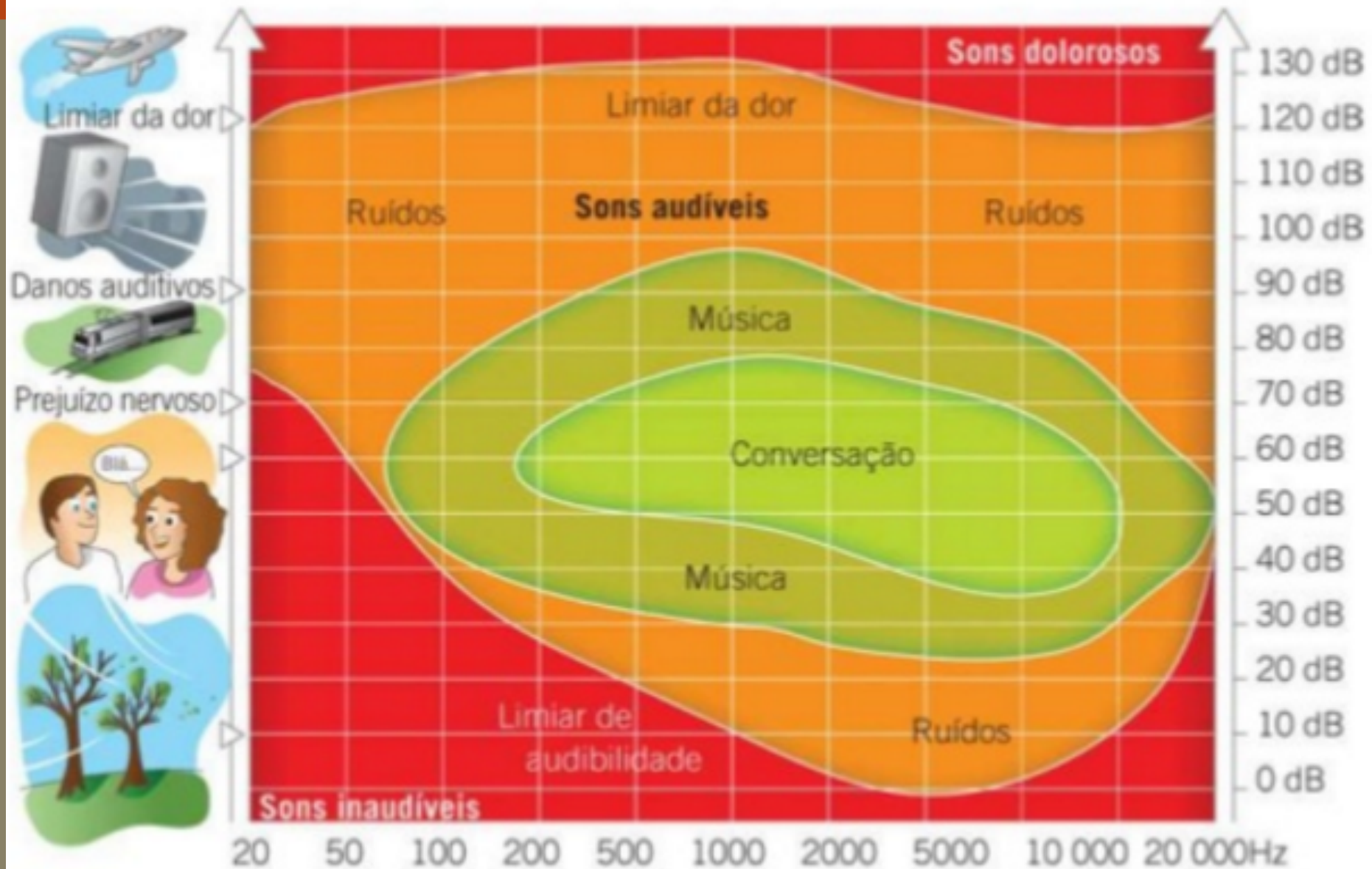
Decibelímetro



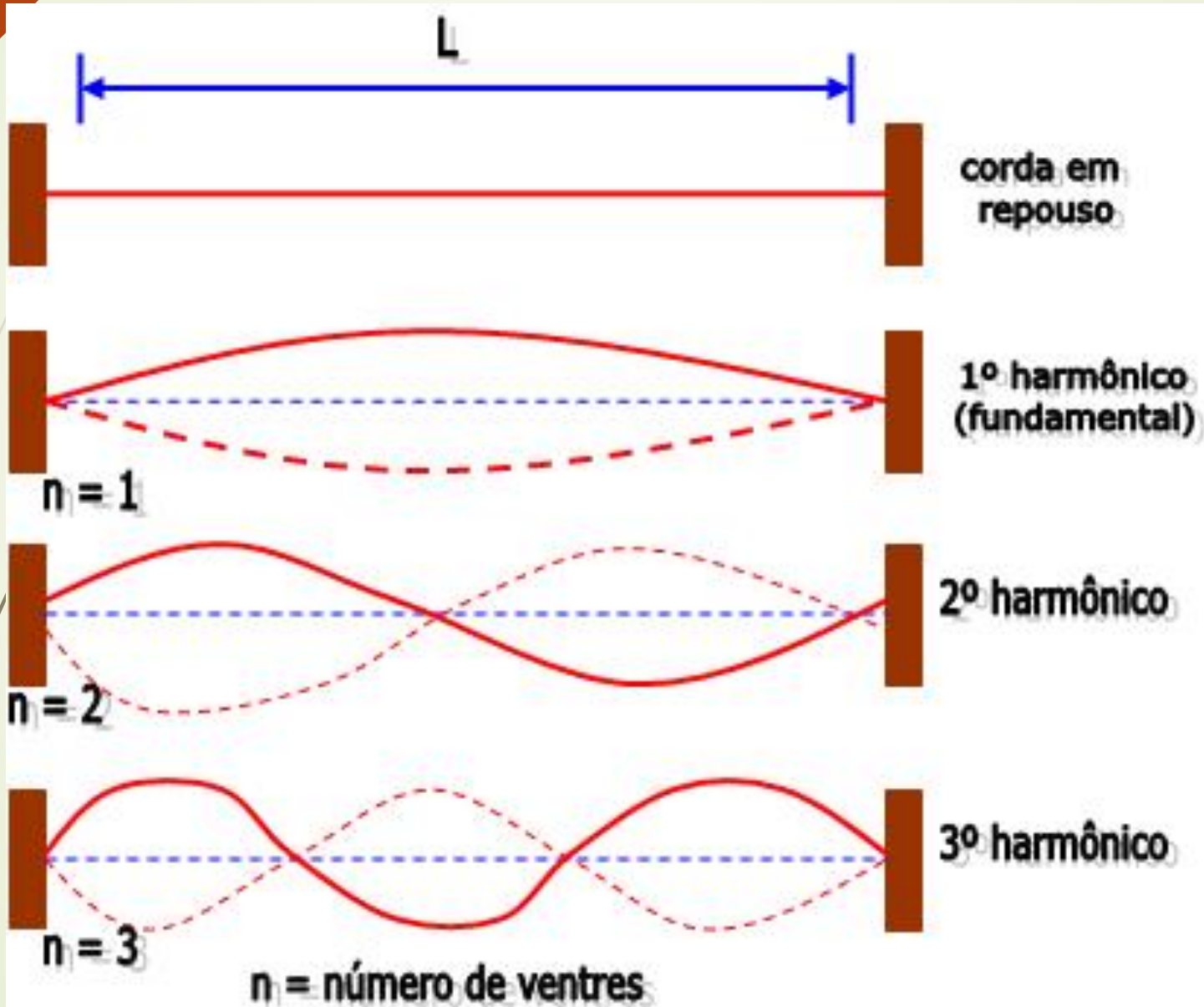
Decibelímetro
playstore



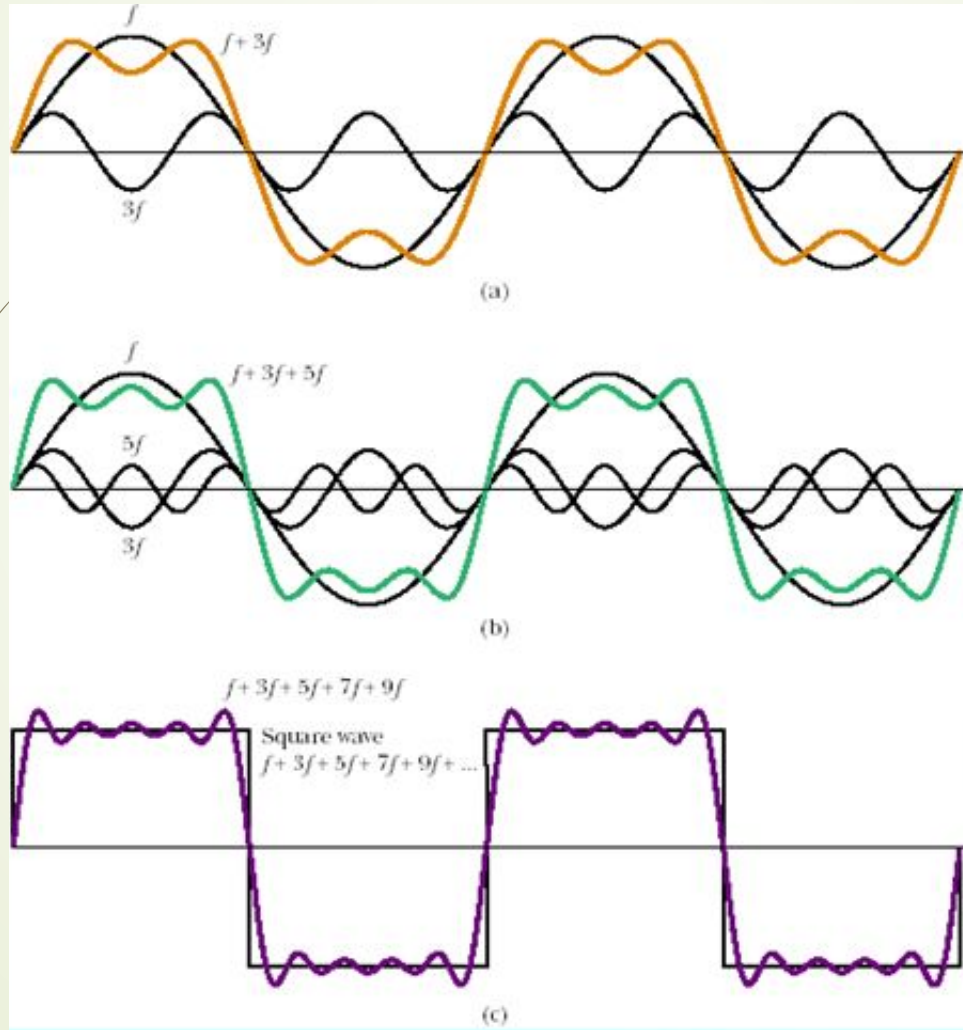
Audiograma – regista o limiar de audibilidade de cada pessoa.



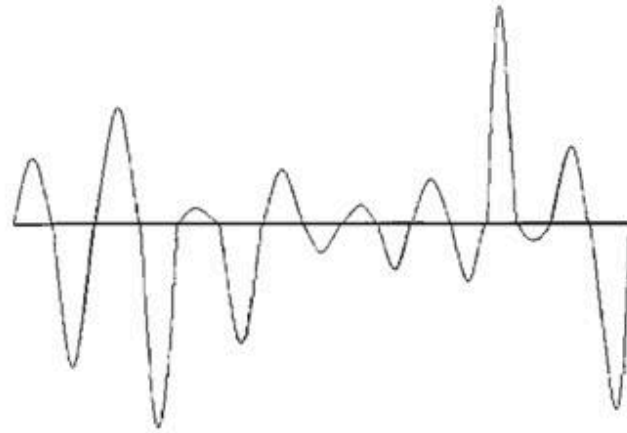
Timbre



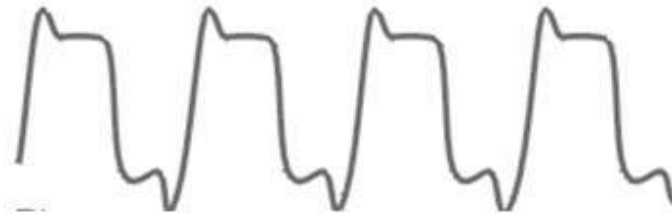
Timbre - Superposição harmônica



VOZ



piano



violino





Bibliografia



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