

Phys 1240: Sound and Music

LAST: Jeff Merkel on "sound in the studio"

TODAY: Wrapping up - voices, sonograms, ...

NEXT: Final exam: Sat 7:30-10 PM.
See web!

Jeff M's office hour is Friday 6-8,
Benson Earth Sciences (BESC 185)

CT survey

Where do you normally sit?
(i.e. for most of this term)

- A) Front third of the room
- B) Middle third
- C) Rear third
- D) Balconies
- E) I move a lot!

Voice:

Consonants:

Sudden high pressure.

No definite pitch

p	b	(lips)
t	d	(tongue)
k	g	(palate)

Voice:

Consonants:

Some can be sustained

No definite pitch (not harmonic!)
(like "white noise")

f	v	(lips)
th(in)	th(em)	(tongue)
s	z	(tongue - different spot)
sh	zh	(tongue - further back + teeth)

nasal

m	(lips)
n	(tongue)
ng	(palate)

Some are "mixtures"

Say z and open your mouth
(becomes a vowel)

Close your mouth
(becomes an s)

vowels

Periodic (pitch!)
Spectrum is harmonic

Like a "reed" instrument
(vocal cords)

Can sustain "ah"
Can't sustain "oi" like "oil"

formants

Formants:

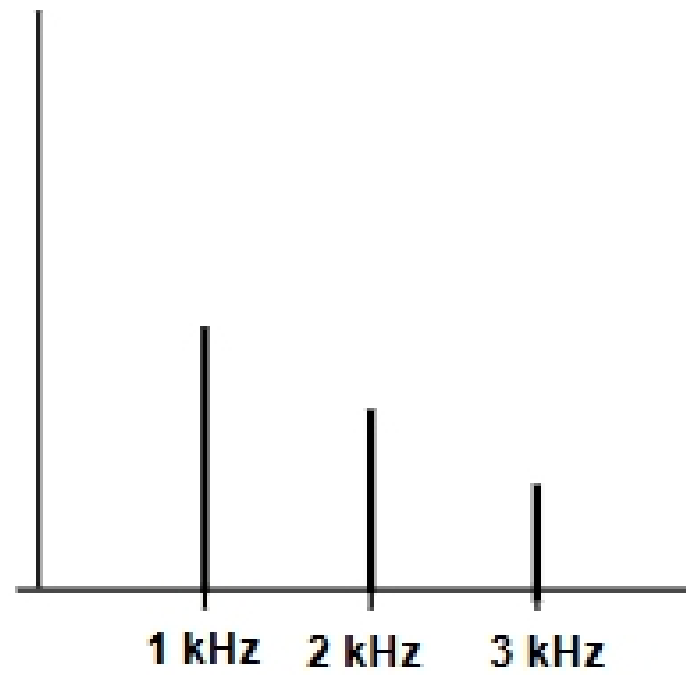
Certain *ranges* of frequency are
enhanced (or suppressed), to
form a particular vowel

consider a cylinder

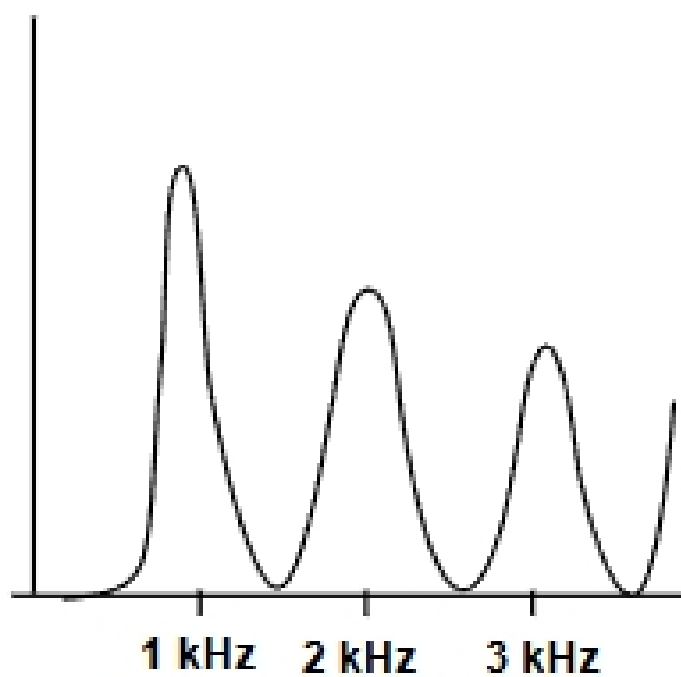


What are the
"resonant frequencies"?

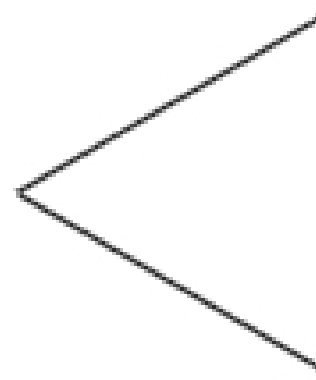
ideal spectrum of cylinder
of some given size



Possible spectrum of (real) cone
of some given size



consider a "cone"



What are the
"resonant frequencies"?