TECH 101

Review of Last Class

Sound & Space

 Direct Sound vs. Reflected, Absorbed, and Diffused Sound

 Destructive vs. Constructive Interference (Dancing Sine Waves)

Microphones

 Polar Pattern: angular sensitivity (cardioid, omni, figure 8, etc.)

 Transduction Principle: acoustic->electric (dynamic, condenser, ribbon)

  Electromagnetic Transduction - translation of an acoustic->electrical

 Proximity Effect - bass boosted up close

 Stereo microphone techniques (quick, will talk about again briefly)

Pauline Oliveros

Some Sound Observations

The Practice of **Deep Listening** / Listening with the Body

Describing What We Hear ("dog bark which curves downward")

"Why can't sounds be visible?"

"What kind of sound system does the electronic musician find?"

"One's ideas about music can change radically after listening to recorded works at fast forward or rewind on a tape recorder"

How animals hear: bats, marine animals, insects (the "micro-world")

"A fast sweep of the audio range by a tone generator can produce a click"
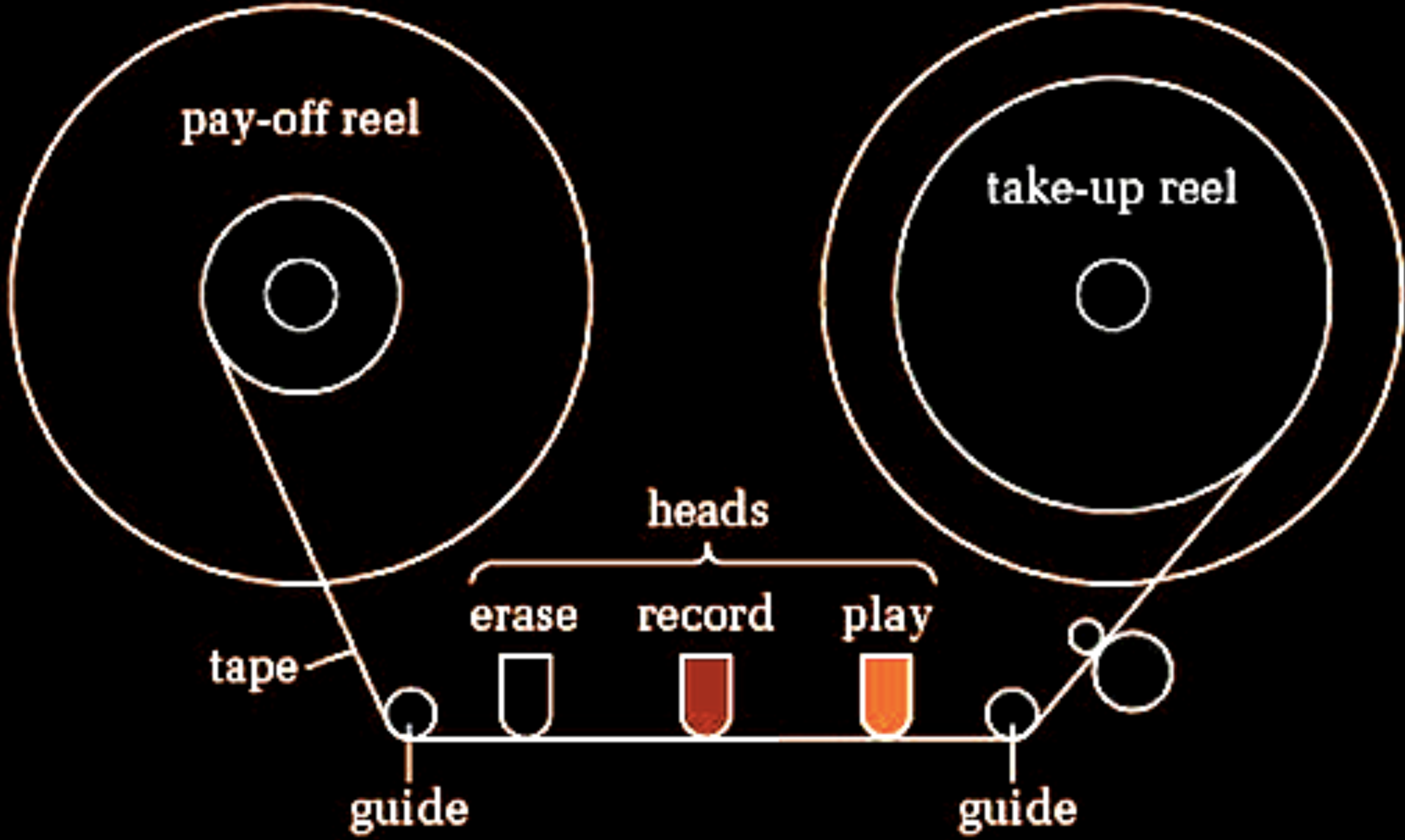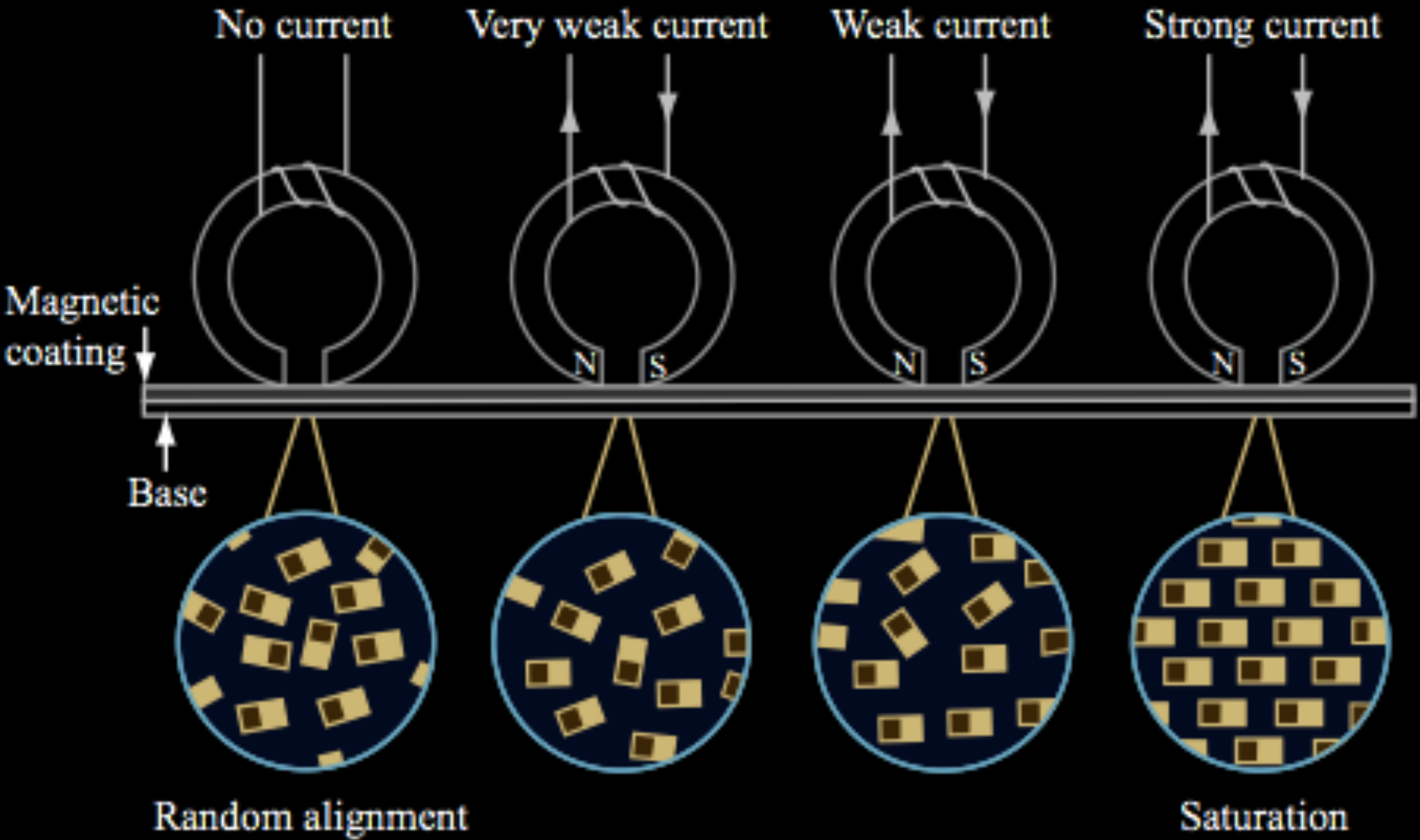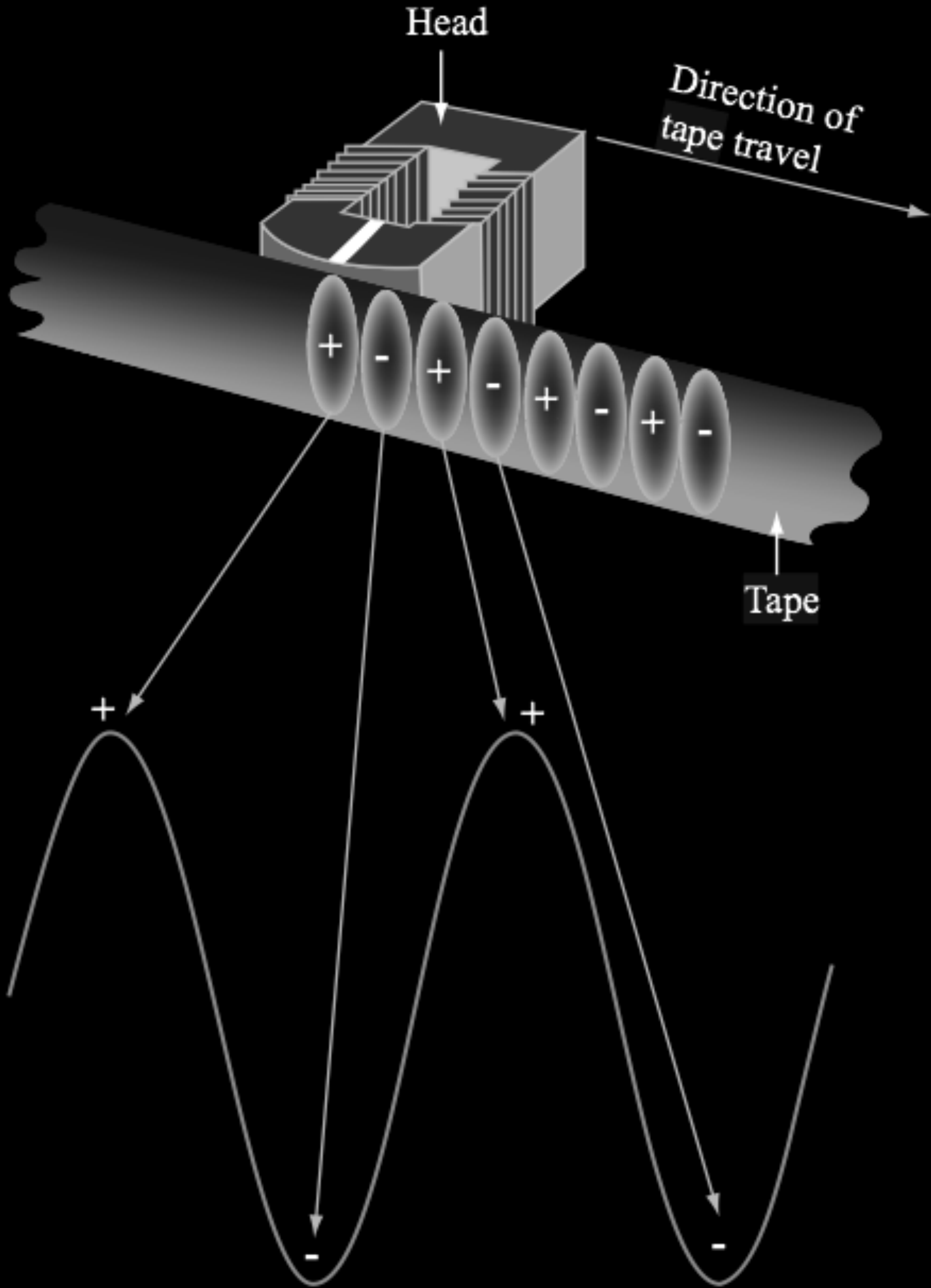
Combination Tones / Heterodyning

TAPE MUSIC

MAGNETIC TAPE

MAGNETIC TAPE RECORDERS

Head

Direction of tape travel

Tape

HOW IT WORKS

No current   Very weak current   Weak current   Strong current

Magnetic coating

Base

Random alignment   Saturation

SPEED & BANDWIDTH

Tape Speed (inches/s)	Bandwidth	Use
38 cm/s (15)	20Hz - 20kHz	studio recording
19 cm/s (7.5)	30Hz - 15kHz	home recording
9.5 cm/s (3.75)	40Hz - 13kHz	general use
4.8 cm/s (2)	50Hz - 6kHz	speech dictation

EDITING TAPE

take 6

BASIC TAPE MANIPULATION PROCEDURES

1. Speed - transposition

2. Backwards - direction

3. Cutting - remove attacks, change envelopes

4. Splicing - editing, crossfade sounds

5. Looping - create rhythm from repetition

6. Mixing - record multiple layers of sound

7. Delay – run one tape past two machines, mix outputs

Digital Audio Editing

Listening to Sounds!

We'll check out some Recorder Scavenger Hunt Sounds!

In the meantime, get **ocenaudio** installed on your laptop

And download the **ocenaudio help sheet:**

timara.net/101resources

3/10 ocenaudio I: Basic Editing, Importing, Exporting

Download the ocenaudio Help Sheet here. **No specific work with ocenaudio, but please have it downloaded and functioning on your personal machine! You should feel comfortable with BASICS.1 and BASICS.2.**

HW: Read "Early Electronic Music in Europe" by Thom Holmes from *Electronic and Experimental Music: Pioneers in Technology and Composition*

Listen to Étude aux Chemins de Fer by Pierre Schaeffer and Gesang Der Juenglinge (Excerpt) by Karlheinz Stockhausen.