

Physical property vs perceptual property



Pitch

Loudness

Timbre

Frequency

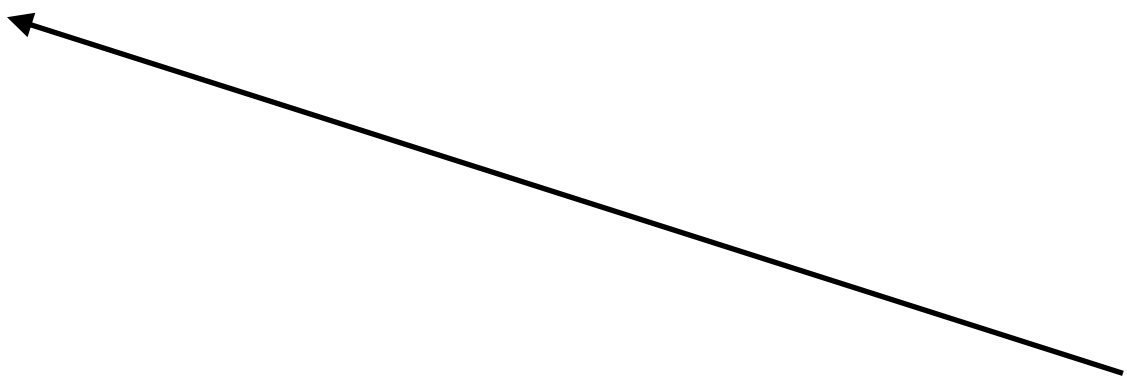
Intensity

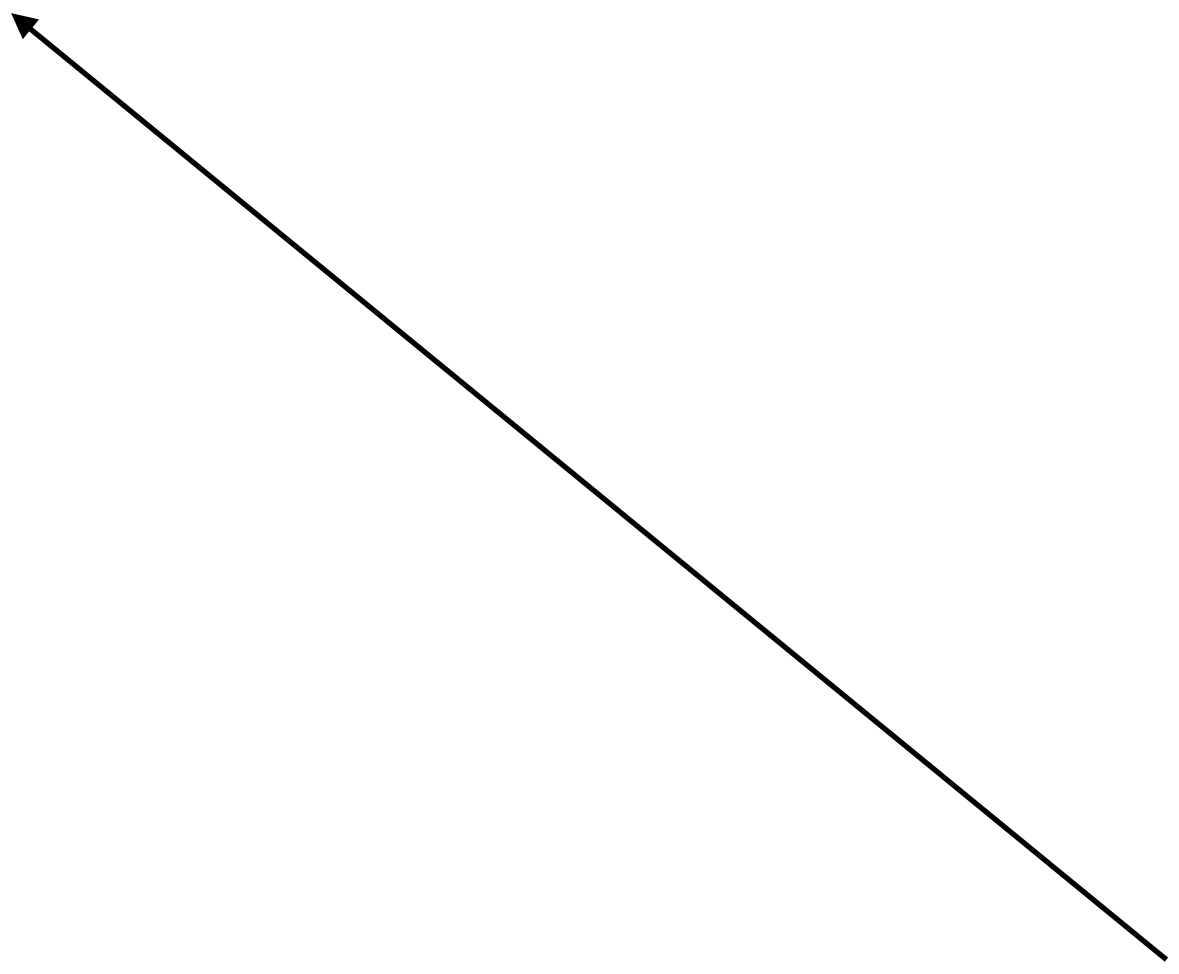
Time variation & Spectral content

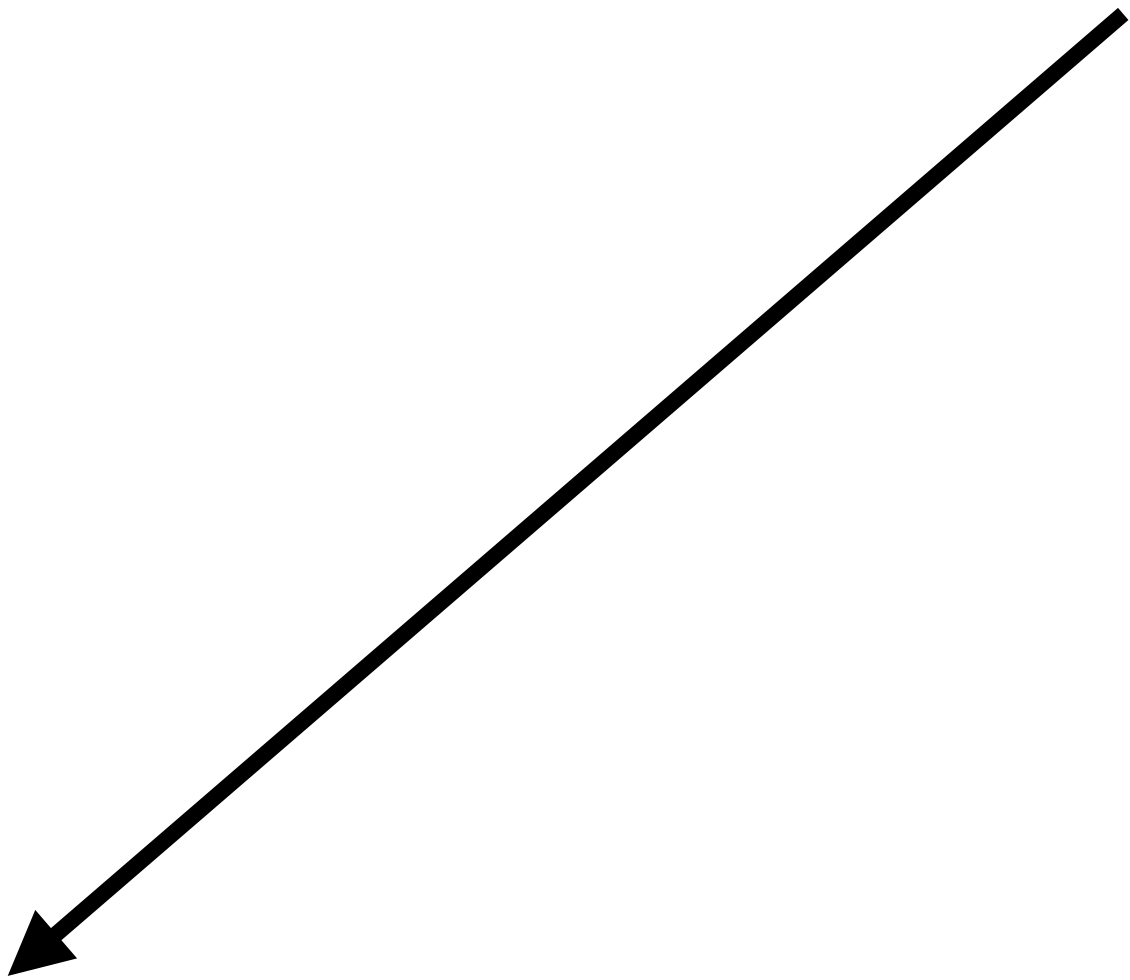


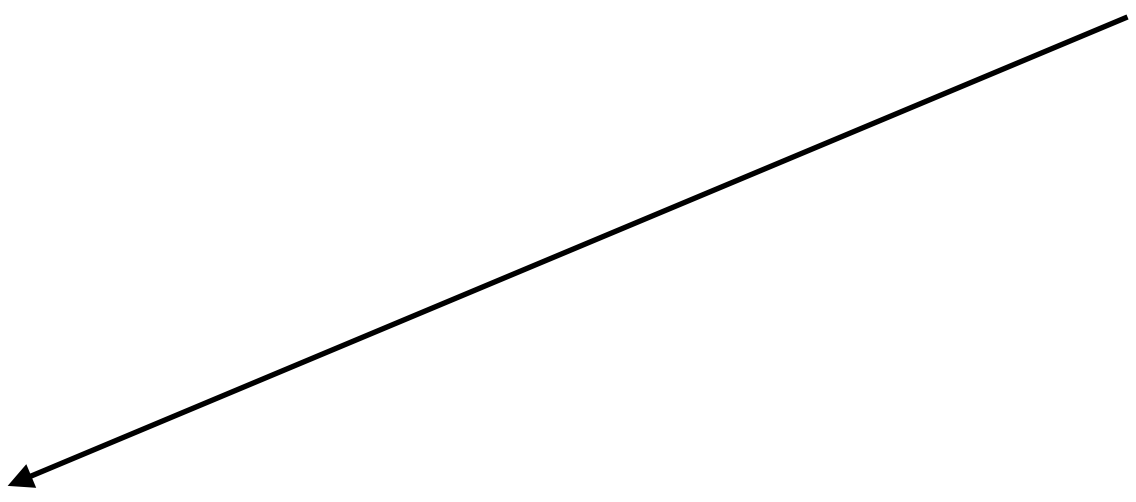


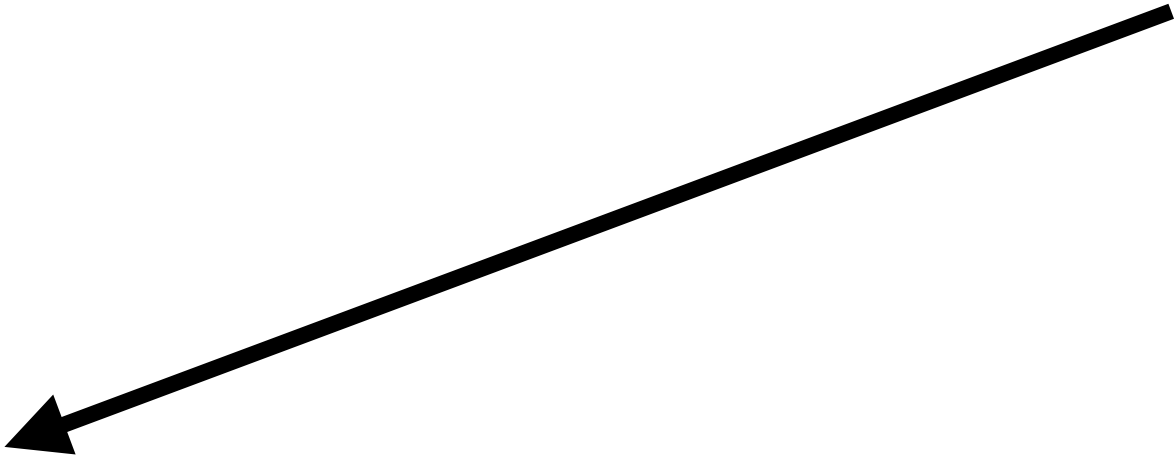


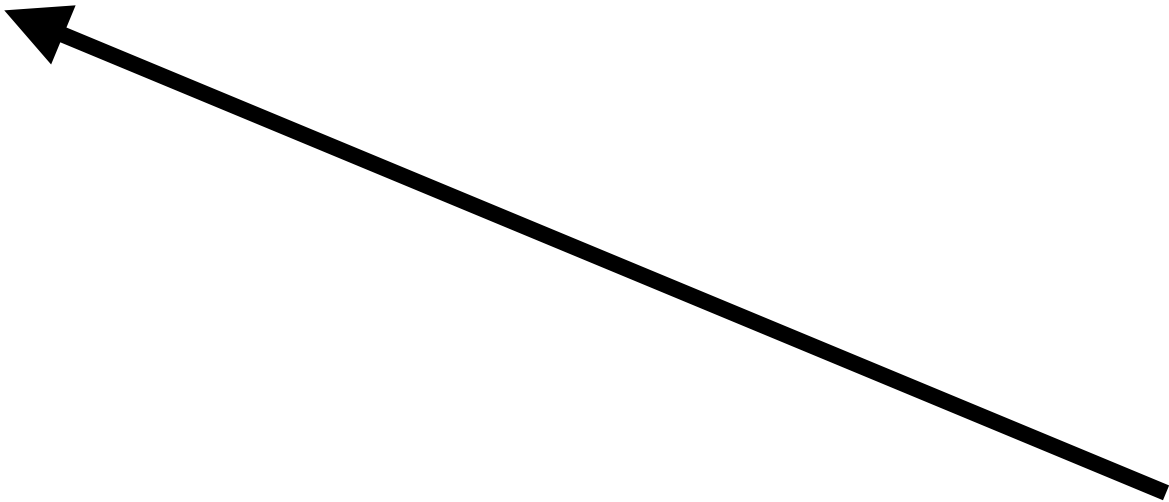




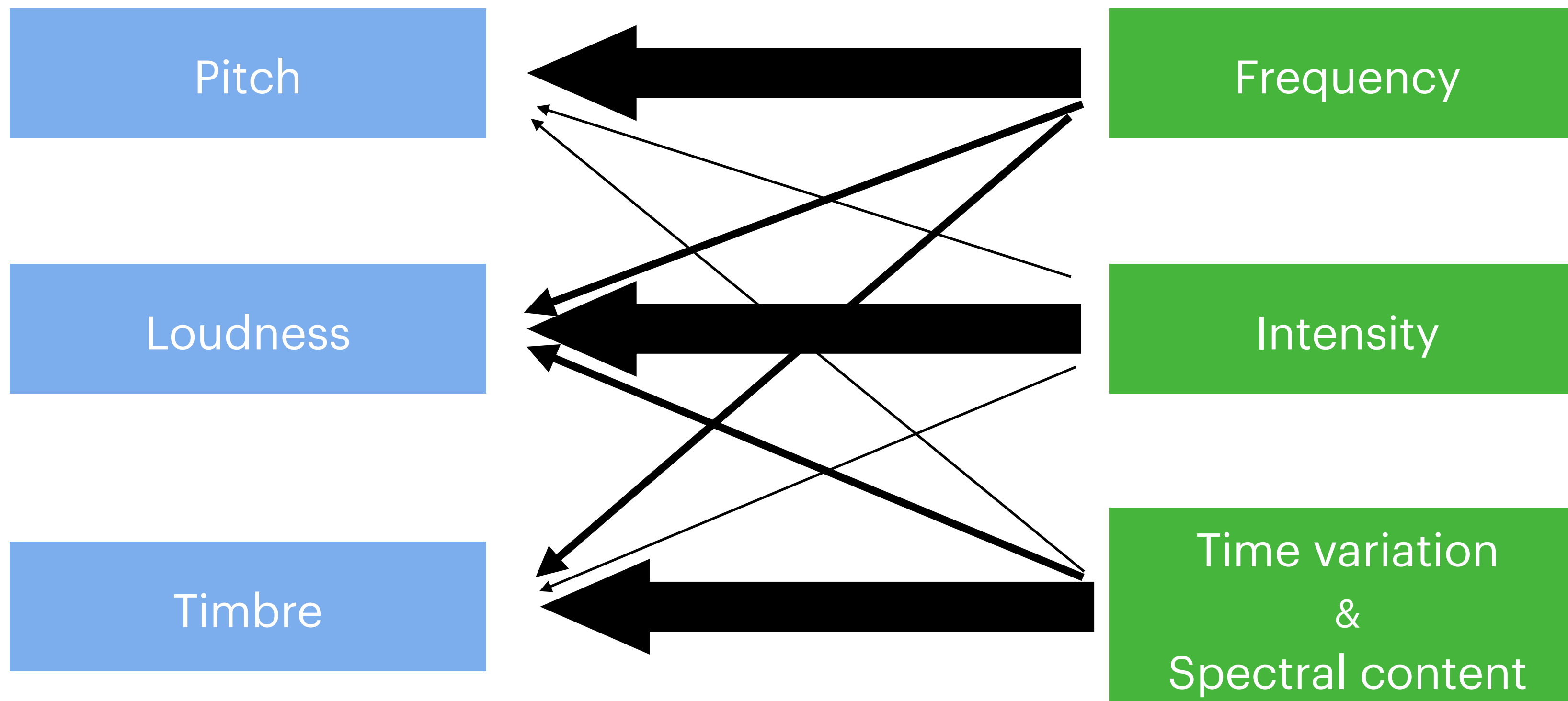








Physical property vs perceptual property



Summary

- ▶ Quantifying sound
 - Physical property: Frequency, intensity, time variation and spectrum
 - Perceptual property: Pitch, loudness and timbre
- ▶ Digital sound wave
 - Sampling and quantization
- ▶ Time domain vs frequency domain
 - Frequency domain representation and frequency analysis