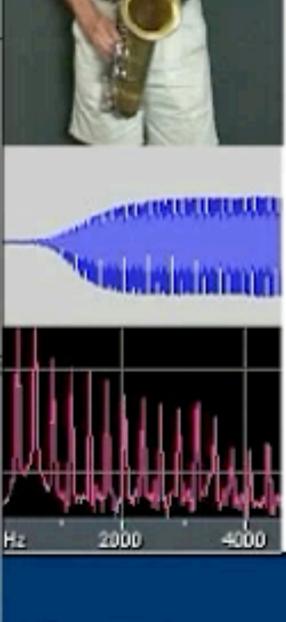
Timbre (also known as tone color/quality)

Depends strongly on *envelope* (time variation) and also depends on spectrum

Sound properties - Frequency, amplitude, envelope & spectrum -> pitch, loudness & timbre

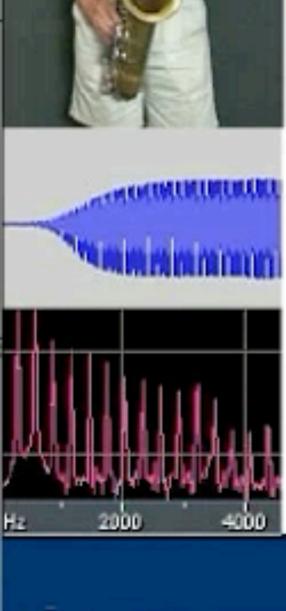


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<u>Physclips - Waves and Sound</u>

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Physics@UNSW

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Timbre (also known as tone color/quality)

Depends strongly on *envelope (time variation)* and also depends on *spectrum*



Timbre: Spectrum and harmonics

- A periodic wave has a harmonic spectrum
 - Spectrum includes both magnitude of the harmonics and not their relative phases
 - Our ears are not very sensitive to relative phase
- ▶ Harmonic series: a set of frequencies f, 2f, 3f, 4f, f is the fundamental frequency

