

# Loudness = volume?

- ▶ Loudness is the noise level perceived by an individual, whereas volume is an absolute noise level that can be scientifically measured. For example, if your family is watching a movie together, the TV volume is the same for everyone in the room. However, the TV's loudness may be much less for a person with a hearing impairment than it is for a person with normal hearing.
- ▶ If you increase the volume on a television, it will also incrementally increase the loudness of the noise. However, increasing the volume will not increase the loudness to the same degree for every person.

# Loudness and spectra

- ▶ Upper spectrum: Spectrum of the *first* 0.3 seconds
- ▶ Lower spectrum: Spectrum of the *last* 0.3 seconds
- ▶ Observations
  - Fundamental frequency is hardly changed
  - Higher harmonics make the note sound louder

