

2 **Jean-Baptiste Fourier** or spectra as fingerprints of musical systems

- FOURIER discovers that the timbre of musical sound is composed of many different frequencies or even frequency regions
- The distribution and intensity of those frequency packets characterize the specific musical instrument or the specific voice
- Spectra mirror the natural harmonics on the basis of a fundamental
- In this sense today's knowledge of a sound consists of: i) on one hand a specific resonance mode relative to a fundamental and ii) on the other hand this resonance simultaneously consists of a spectrum composed of frequency distributions corresponding to a selection of natural harmonic frequencies