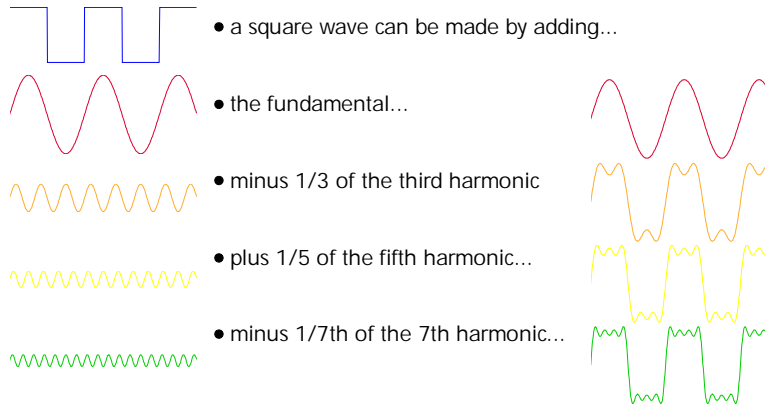


Frequency Analysis

Jean Baptiste Fourier showed that any signal or waveform could be made up just by adding together a series of pure tones (sine waves) with appropriate amplitude and phase.

This is a rather startling theory, if you think about it. It means, for instance, that by simply turning on a number of sine wave generators we could sit back and enjoy a Beethoven symphony.

Of course we would have to use a very large number of sine wave generators, and we would have to turn them on at the time of the Big Bang and leave them on until the heat death of the universe.



The diagram shows how a square wave can be made up by adding together pure sine waves at the harmonics of the fundamental frequency.