

Signal Types

Electrical Engineering

The six distinctions that decide which analysis tool a signal is entitled to.

Each row is one axis, and a signal sits somewhere on all six.

Distinction	One side	The other
Time	Continuous $x(t)$	Discrete $x[n]$
Amplitude	Analogue	Quantised
Repetition	Periodic	Aperiodic
Size	Finite energy	Finite power
Symmetry	Even, $x(-t) = x(t)$	Odd, $x(-t) = -x(t)$
Predictability	Deterministic	Random

A periodic signal has finite power and infinite energy, which is why it needs a Fourier series and not a transform.