

THEORY

When a system is subjected to a sinusoidal input, the output is also sinusoidal, but with a different amplitude and phase. The transfer function of a system is a complex number that describes the relationship between the input and output. It is defined as the ratio of the output to the input, evaluated at a specific frequency. The magnitude of the transfer function represents the gain of the system, and the phase represents the phase shift. The transfer function can be used to predict the output of a system for any input signal.

The transfer function of a system can be determined by applying a sinusoidal input and measuring the output. This is done by applying a sinusoidal input of a known frequency and amplitude, and measuring the output signal. The output signal is then divided by the input signal to obtain the transfer function. The transfer function can be used to predict the output of the system for any input signal.

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