Fourier Series Fundamentals

Mathematical Methods in the Physical Sciences

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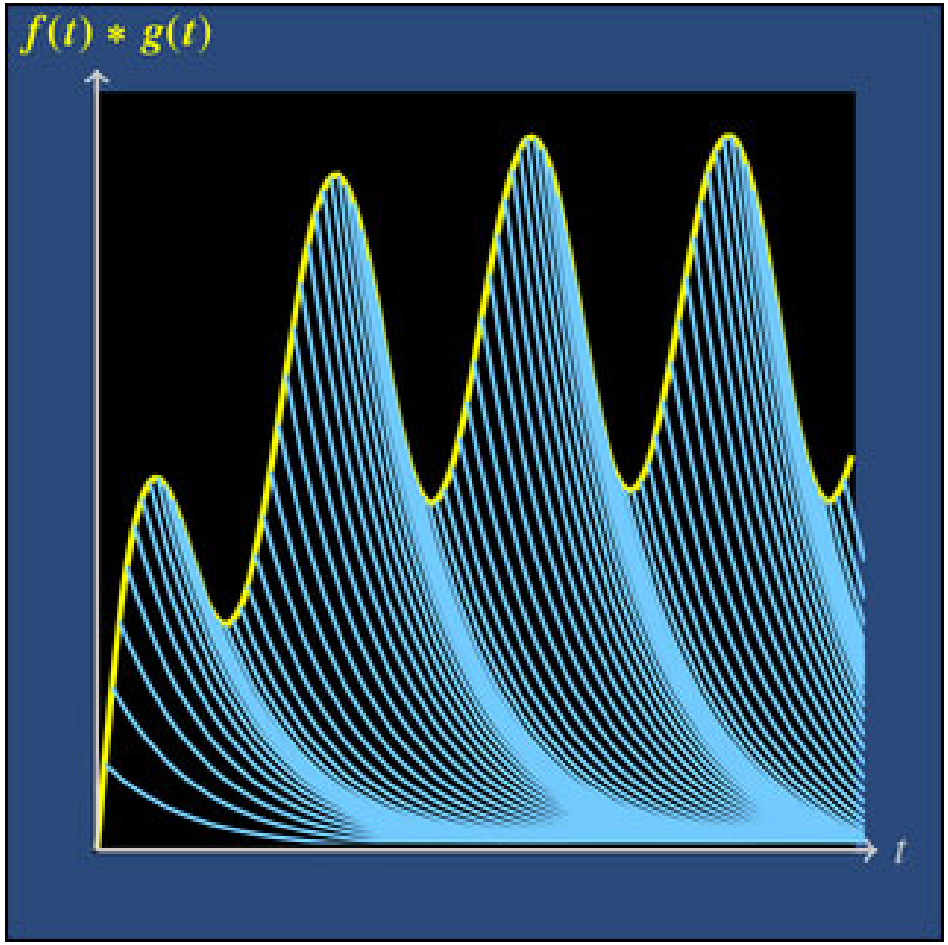
Introduction

Fourier series are like power series but are only used to represent periodic functions.



Periodic Functions

Applications of Fourier Series

Average Value of a Function

Definition

$$\text{average of } f(x) \text{ on } (a,b) = \frac{\int_a^b f(x)dx}{b-a}$$

Fourier Coefficients

Dirichlet Conditions

Complex Forms of Fourier Series

Other Intervals

Questions?