



FOURIER TRANSFORM AND ITS APPLICATION

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ABSTRACT. *By means of Fourier series can be described various examples of wave motion, such as the sound, or wave of the earthquake. It can be used in many research or work, such as the data analysis after an earthquake or digitizing music. Generalization of Fourier series, which allows for some applications more appropriate expression is the Fourier integral. Fourier transform based on a Fourier integral in the complex form. Fourier transform is an important tool in a number of scientific fields. Its advantages, disadvantages and subtleties have been examined many times by dozens of mathematicians, physicists and engineers. In this contribution we try to summarize important aspects of this transform and discuss variety of its uses in contemporary science with emphasis on demonstrating connections to dynamic interactions in the vehicle-roadway system.*

KEY WORDS: *Fourier transform, time series, frequency representation.*

CLASSIFICATION: *I55, I85, M55*

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