

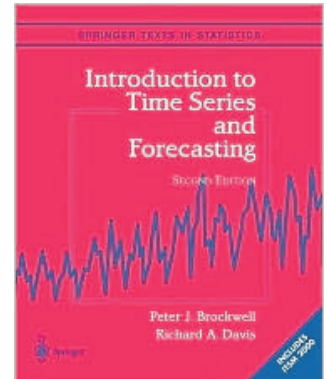
Time Series Analysis

STAT 758

TR 4:00PM - 5:15PM
Frandsen Humanities (FH) 219

Text: "Introduction to Time Series Analysis and Forecasting" by Peter Brockwell and Richard Davis, 2nd edition, Springer, 2002.

Instructor: Ilya Zaliapin (zal@unr.edu)



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- Time series is one of the most common form of data in physics, finance, economics, geosciences, biology, and social sciences. Accordingly, time series analysis is an inevitable component in a toolbox of a professional statistician. In this class we will discuss essential theoretical and practical methods of time series analysis and consider various concrete applications. A professional statistical package will be used to apply the concepts discussed in the class to real data sets.
 - **Goals:**
 - a) Overview the essential methods and concepts of time series analysis;
 - b) Understand how those methods help answering two major questions:
 - Is there a mechanism that governs the process? (Modeling),
 - What can we tell about the future of the process? (Forecasting);
 - c) Get practical skills in applying theoretical concepts to real time series.
 - **Topics include:**
Descriptive techniques, stationary processes, ARIMA models, GARCH models, spectral analysis, forecasting.
 - **Prerequisites:** MATH 311, MATH/STAT 352, or instructor's permission.