Duke University

STA 356: Time Series and Forecasting, Spring 2003

Course outline and administrative details

Lecturer

Chris Carter
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Class schedule

Monday, Wednesday and Friday, 1:10–2:00, Room 025, Old Chemistry Building

Introduction

The course gives an introduction to Bayesian time series analysis using Dynamic Linear Models (DLM). Note that these models are also called State Space Models (SSM) and include ARIMA models as a special case.

The first part of the course covers the properties of Dynamic Linear Models and discusses algorithms such as the Kalman filter and smoother. This material is given in Chapters 2-9 in West and Harrison.

The second part of the course looks at various extensions to DLMs. Possible topics include intervention models using mixtures of DLMs and non-Gaussian observations. We will discuss MCMC methods to fit these models.

Textbook

"Bayesian Forecasting and Dynamic Models, 2nd Ed." by West and Harrison; Springer, 1997.

Grading

- The following weighting scheme will be used to determine your final course grade:

2 × Midterm Examinations	25% each
Final Project	30%
Other homework	20%
Total	100%

- You will be allowed to bring two letter sized pages of self-prepared notes/formulas along to the examinations. All necessary statistical tables will be provided.
- The date for the midterm examinations will be announced later in the course.

Web site

Course material will be placed in the library as well as the web site

http://www.stat.duke.edu/courses/Spring03/sta356