

Themenliste Seminar Funktionale Datenanalyse 2015

Für alle zum Lesen:

- Glättung , Mixed models Darstellung von penalisierter Likelihood
- Fahrmeir, L., Kneib, T., & Lang, S. (2007). Regression. Springer-Verlag Berlin Heidelberg.
Kap. 6.7, 7.1.1 - 7.1.4 zur Vorbereitung
Kap. 7.1.9, 8.5.2. direkt relevant
- Sørensen, H., Goldsmith, J., & Sangalli, L. M. (2013). An introduction with medical applications to functional data analysis. *Statistics in medicine*, 32(30), 5222-5240.
- Cuevas, A. (2014). A partial overview of the theory of statistics with functional data. *Journal of Statistical Planning and Inference*, 147, 1-23.
Abschnitte 1., 2., 3.2, 5.1 (Modell ohne Details), 5.2 (Modell ohne Details)

1. Deskription und Ausreißerdetektion für funktionale Daten (Fabian Scheipl)

- Hyndman & Shang (2012): Rainbow Plots, Bagplots, and Boxplots for Functional Data, JCGS
- López-Pintado & Romo (2012): On the Concept of Depth for Functional Data , JASA

2. Funktionale Hauptkomponentenanalyse (Sonja Greven)

- Ramsay, & Silverman (2005): Kapitel 8 und 9
- Yao, Müller & Wang (2005): Functional Data Analysis for Sparse Longitudinal Data, JASA

3. Regression Skalar-auf-Funktion (Sonja Greven)

- Ramsay, & Silverman (2005): Kapitel 15
- Goldsmith, Bobb, Crainiceanu, Caffo & Reich (2011): Penalized Functional Regression, JCGS

4. Regression Funktion-auf-Skalar (Fabian Scheipl)

- Ramsay, & Silverman (2005): Kapitel 13
- Reiss, Huang & Mennes (2010): Fast Function-on-Scalar Regression with Penalized Basis Expansions, The International Journal of Biostatistics

5. Boosting für funktionale Regression (Sarah Brockhaus)

- Hofner, B., Mayr, A., Robinzonov, N., & Schmid, M. (2014). Model-based boosting in R: a hands-on tutorial using the R package mboost. *Computational Statistics*, 29(1-2), 3-35.
- Brockhaus, S., Scheipl, F., Hothorn, T., & Greven, S. (2014). The functional linear array model. under review.

jeweils entsprechendes aus Ramsay & Silverman (2002), Ramsay et al (2009)
ggf. ergänzende weitere Literatur

R-Pakete

fda - Functional Data Analysis

rainbow - Rainbow plots, bagplots and boxplots for functional data

refund - Regression with Functional Data

FDboost – Boosting functional regression models