

SEMINAR UEBER STATISTIK SS06

LITERATUR:

Fleming, Thomas R.; Harrington, David P. **Counting processes and survival analysis.** John Wiley & Sons, 1991.

Klein, John P.; Moeschberger, Melvin L. **Survival analysis. Techniques for censored and truncated data.** Springer, 1997.

3. April 2006 - EINFUEHRUNG

Beispiele von Ueberlebenszeiten und Censoring. Der abstrakte bedingte Erwartungswert.

2. Mai 2006 - INTRODUCTION TO SURVIVAL ANALYSIS

Survival and hazard function, censoring and truncation, likelihood for censored and truncated data.

FH: 0.1-0.2; KM: 1.1-1.19, 2.1-2.3, 3.1-3.5

8. Mai 2006 - COUNTING PROCESSES AND MARTINGALES I

Filtrations, martingales and local martingales, predictable processes, Doob-Meyer decomposition for a counting process.

FH: 1.1-1.3, parts of 1.4, 2.7, parts of 2.2 – 2.3; KM: 3.6

15. Mai 2006 - COUNTING PROCESSES AND MARTINGALES II

Doob-Meyer decomposition and quadratic (co)variation process of a martingale, stochastic integrals and martingales, covariance of two stochastic integrals.

FH: 2.7, 1.4 - 1.5, parts of 2.3-2.6; KM: 3.6

22. Mai 2006 - NONPARAMETRIC ESTIMATION OF SURVIVAL AND INTEGRATED HAZARD I

Derivation of Nelson(-Aalen) estimator, Kaplan-Meier estimator, bias and variance of these estimators.

FH: 0.2, 3.1-3.2; KM: 3.6, 4.1-4.2

29. Mai 2006 - NONPARAMETRIC ESTIMATION OF SURVIVAL AND INTEGRATED HAZARD II

Confidence intervals and consistency of the Nelson(-Aalen) and Kaplan-Meier estimators.

FH: 3.4; KM: 4.3

6. Juni 2006 - LOGRANK TEST

Logrank statistic and weighted logrank statistic, derivation of the variance with counting process methods.

FH: 0.2, 1.5, 3.3; KM: 7.1-7.3

12. Juni 2006 - PROPORTIONAL HAZARD MODEL AND PARTIAL LIKELIHOOD I

Proportional hazard model, multiplicative intensity model, partial likelihood.

FH: 4.1-4.4; KM: 3.6, 8.1-8.3

20. Juni 2006 - PROPORTIONAL HAZARD MODEL AND PARTIAL LIKELIHOOD II

Central limit theorems, diagnostics with martingale residuals.

FH: 4.5-4.6; KM: 11.1, 11.3, 11.5

26. Juni 2006 - ADDITIVE HAZARD MODEL

Additive hazard model, least-squares estimators, derivation with counting process methods, tests

KM: 10.1-10.3