

**Wiener Biometrische Sektion
der Internationalen Biometrischen Gesellschaft
Region Österreich – Schweiz**

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Einladung zum

Biometrischen Kolloquium

am Mittwoch, dem 08. November 2000, 16:15 Uhr

im Seminarraum des
Instituts für Medizinische Statistik
Schwarzspanierstr.17 (Gebäude der Physiologie, 3. Stock)
Tel. 4277 63201
A-1090 Wien

Es spricht Frau Alessandra Nardi
University of Teramo and University of Vienna

zum Thema:

On residuals analysis for survival data

Barbara Schneider
Präsidentin

Thomas Waldhör
Sekretär

Abstract:

Residuals play a central role in assessing both, the goodness-of-fit of a model to a data set (as a whole) and the suitability of individual predictions. While the practice of residual analysis is well established for the General Linear Model, this is not the case with regression models for possibly censored survival data.

Two recently proposed residuals (Nardi and Schemper, 1999) are presented, which belong to the class of Cox-Snell generalised residuals. These residuals have been originally suggested for the purpose of outlier screening. However their properties make them suitable for verifying distributional assumptions on the baseline hazard in parametric models as well.

First we deal with residuals' sampling distribution under a correctly specified model. Then we demonstrate their expected behaviour under a misspecified baseline hazard but no censoring. Here exponential, Weibull and log-normal and log-logistic regression models are considered, corresponding to the assumptions of a constant, monotone and non-monotone hazard. The asymptotic distributions of the proposed residuals are derived, based on the convergence of m.l.e. under the alternative hypothesis. Finally the effect of increasing censoring is analysed and methods for taking it into account are suggested.