

In der

AG STOCHASTIK

spricht am Dienstag, den 18. Oktober 2011, um 15.30 Uhr

Prof. Dr. Marie Hušková

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über das Thema

Detection of structural breaks

Abstract:

The talk will concern procedures for detection of structural breaks (or instability) in both the retrospective and sequential setups.

In the *retrospective setup*, a sequence of observations Y_1, \dots, Y_n obtained at the ordered time points $t_1 < \dots < t_n$ are available. The first m observations follow a certain statistical model and after the m -th observation the model changes and the remaining $n - m$ observations follow another model. The point m is unknown and is called break (change point). The problem is to detect (to test H_0 : no break (change) & H_1 : there is a break (change)) and to identify the location of such a change (to estimate m).

In the *sequential setup* the focus is on procedures for detection of a change in models when data arrives sequentially and training (historical) data with no change are available. After each new observation one has to decide whether the data indicate or not a change in the model. The aim is to construct a procedure that detects a change as soon as possible.

Several classes of retrospective as well as sequential procedures for detection of a change will be presented together with their asymptotic properties. Asymptotic results will be accompanied by a simulation study.

The above formulated problems occur in a number of applications, e.g., in econometric times series, financial time series, meteorology, climatology, hydrology, environmental studies, statistical quality control, medical care among others. Applications to some real data sets will be presented during the talk.

Ort: Raum 1C-04 (Geb. 05.20)

Die Dozentinnen und Dozenten der Stochastik