

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

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Einladung zum

**BIOMETRISCHEN KOLLOQUIUM**

am **Montag, 18. Jänner 2016** um **16:00 Uhr**

im Seminarraum (Ebene 3, Raum 88.03.513) des Zentrums für Medizinische  
Statistik, Informatik und Intelligente Systeme (CeMSIIS)  
der Medizinischen Universität Wien, Spitalgasse 23, 1090 Wien  
(Plan siehe <http://www.muw.ac.at/cemsiis/allgemeines/anschrift/>)

Vortragende:

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Institut für Stochastik und Wirtschaftsmathematik  
Technische Universität wien

**STATISTICAL INFERENCE AFTER LASSO ESTIMATION**

Wir freuen uns auf zahlreichen Besuch.

Franz König  
Präsident

Stephan Lehr  
Sekretär

# STATISTICAL INFERENCE AFTER LASSO ESTIMATION

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## **Abstract:**

The Lasso estimator as introduced in Tibshirani (1996) as well as many variants thereof have gained strong interest in the statistics community and in applied areas over the past two decades. The main attraction of the Lasso estimator lies in its ability to perform model selection and parameter estimation at very low computational cost and in the fact that the estimator can be used in high-dimensional settings where the number of variables  $p$  exceeds the number of observations  $n$ .

Deriving distributional properties and, in particular, constructing confidence regions in this framework constitutes a non-trivial task due to the non-regularity that these estimators exhibit. In this talk, we give an overview of these difficulties and discuss existing results and common approaches. We also present recent findings on how to construct valid confidence sets based on the Lasso estimator in a general low-dimensional framework that close a gap in the literature between the one-dimensional ( $p=1$ ) and the high-dimensional case ( $p > n$ ).