



Statistical Sciences  
UNIVERSITY OF TORONTO

## SEMINAR

April 6, 2017 at 3:30 pm

*\*Refreshments will be provided at 3:15pm\**

Sidney Smith Hall, Room 2108

Speaker: Holger Dette, Ruhr University, Bochum

Host: Stanislav Volgushev

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### **Statistical Methodology For Comparing Curves**

An important problem in drug development is to establish the similarity between two dose response curves (bridging studies). We propose new statistical methodology improving the current state of the art in at least two directions. On the one hand efficient designs are constructed minimizing the width of the confidence band for the difference between the regression functions, which is currently used for a test of similarity. The use of the new designs yields a reduction of the width of the confidence band by more than 50 percent and consequently to a substantially more powerful test. On the other hand – and more importantly – we propose new and substantially more powerful tests for the hypothesis of "similarity". In particular, we develop some non-standard parametric bootstrap procedure and prove its consistency. We also explain some not so well known results about classical goodness of fit tests (such as Kolmogorov-Smirnov-tests) under fixed alternatives.