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**UNIVERSITÄT  
BERN**

Philosophisch-  
naturwissenschaftliche Fakultät

Departement Mathematik und  
Statistik

**Institut für mathematische Statistik  
und Versicherungslehre**

## Kolloquiumsvortrag in Statistik

**Freitag, 24. September 2021, 16.15 Uhr**

**Hörsaal -203, Alpeneggstrasse 22, 3012 Bern**

**Corona-Schutzmassnahmen:**

*Ab dem 20. September 2021 gilt Zertifikatspflicht für alle Aktivitäten, die im Rahmen der Universität Bern stattfinden, unabhängig von der Zahl der Teilnehmenden. Die Einhaltung der Zertifikatspflicht wird mittels Stichproben überprüft. In allen Gebäuden gilt eine generelle Maskenpflicht.*

**George J. Wynne, Imperial College London**

### **Titel: Kernel-based Statistical Methods for Functional Data**

Functional data analysis is the study of data where an individual sample is a function, for example time series or random surfaces. Such data naturally lives in infinite dimensional spaces. This is commonly dealt with by projecting the data to a finite dimensional representation then employing classical finite dimensional statistical procedures.

Kernel-based statistical methods have found wide success in statistical machine learning in the past ten years as a non-parametric, easily computable engine for reasoning with probability measures. The main idea is to use a kernel to facilitate a mapping of probability measures, the objects of interest, into well-behaved spaces where calculations can be carried out. This methodology has found wide application, for example two-sample testing, independence testing, goodness-of-fit testing, parameter inference and MCMC thinning.

This talk will discuss work adapting these kernel-based methods to functional data, both theoretical and practical considerations. Applications will include two-sample testing and goodness-of-fit testing for functional data distributions.