

Dear IOPS members,

The Department Methodology and Statistics at Maastricht University has a vacancy for a PhD student in Statistics within the Research School CAPHRI of the Maastricht University Medical Centre.

The candidate will develop statistical state-space models within the Bayesian framework to analyse multivariate intensive longitudinal data. Intensive longitudinal data become very common nowadays. They are produced for example by electronic devices such as activity trackers. Statistical methods still lag behind these technological innovations. In particular, this research project aims at developing new statistical models to study 1) the dynamic evolution of several variables with intensive measurements measured at the same time with emphasis on the dynamic evolution of the correlation between these variables (e.g. heart rate and activity intensity) and 2) the reliability and validity of devices producing intensive longitudinal data when used in real conditions. The development of these new models involves mathematical derivations to approximate the posterior distribution of the model parameters, simulating data to study the model properties and developing a software package to fit the models. The explosion of intensive longitudinal data in many research fields such as medicine and psychology promises a great future for the developed methods.

The candidate is expected to apply this technical work to real designs resp. data in health research and to publish this work in peer reviewed top journals in medical or behavioral statistics, to present this work on international statistical conferences, e.g. of the Int. Society for Clinical Biostatistics and the Int. Biometric Society, and to disseminate the results through practical guidelines and software for health scientists.

Requirements:

- Graduated with a MSc in Statistics, Psychometrics, Biometrics, or Econometrics
- Good mathematical and computer programming skills
- Good writing and expressional skills in the English language

For further information and submitting your application (before Sept 1), please see the following link:

<https://www.academictransfer.com/en/284291/phd-student-in-statistics/>

Gerard van Breukelen

Chair of the Dept. of Methodology & Statistics at Maastricht University, NL