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MOVEMENT › DATA › PEOPLE

NORAXON Education hosts spm1d

Course Title: Statistical Parametric Mapping - Fundamentals and Applications

Dates: Monday July 29th, 2019 - Tuesday July 30th, 2019
Location: **University of Calgary Downtown Campus**
906 8th Avenue SW - Room Number 330
Calgary, Alberta Canada

Registration: https://www.noraxon.com/course/spm1d_july2019/
Early Registration before June 1 – $399 (USD)
Standard Registration starting June 1 – $449 (USD)
Lunch and coffee breaks included in registration cost.

Instructors:

Todd C. Pataky is an Associate Professor in Human Health Sciences at Kyoto University. He has published over 65 articles in peer-reviewed journals, approximately 45 of which pertain to theoretical and applied aspects of SPM. His 2004-2006 postdoctoral training in functional brain analysis alerted him to the utility of the SPM methodology, and he has since been adopting SPM procedures for analyses of 1D, 2D, and 3D biomechanical continua.

Mark A. Robinson is a Senior Lecturer in Biomechanics at Liverpool John Moores University. His research interests are related to musculoskeletal loading, injury and impairment in the lower limbs especially during dynamic sports activities. He has published >40 journal articles in these areas since 2012 and has >40 verified reviews on Publons. He has used SPM in these contexts for over six years and continues to develop and promote SPM to provide biomechanists with the appropriate statistical tools for analyzing complex biomechanical data.

Course Description: **Statistical Parametric Mapping** (SPM) is a technique that can be used to analyze a variety of biomechanical data including kinematic and force/moment time series. Its primary advantage is that it is objective, mitigating problems associated with subjective analysis decisions. It is conceptually very similar to common statistical analyses like t-tests and ANOVA. It simply generalizes these classical techniques to the domains of 1D, 2D, 3D and indeed *n*D continuum measurements. It is easy to use with a little bit of training, requiring only a few extra concepts beyond those associated with common classical tests. In this workshop you will learn to understand the concepts underpinning SPM, how to apply them, and how to avoid common pitfalls of SPM and applied statistics in general.

Who should attend: Individuals working with biomechanical datasets (e.g. researchers, sport scientists, ergonomists). Note – a working proficiency in Matlab or access to data processing is assumed for course attendees as running SPM analyses requires use of Matlab or Python.

Course participants will learn:

- The foundational information necessary to correctly apply SPM analyses to biomechanical data.
- How to distinguish between scenarios that require different applications of SPM.
- How data need to be structured and prepared to conduct an analysis.
- The advantages and disadvantages of registering data.
- How to interpret results.
- How to report SPM analysis methods and results

Provisional schedule:

Monday July 29th, 2019

8:30 am to 9:00 am	Welcome and Registration
9:00 am to 10:15 am	Introduction and T tests
10:15 am to 10:30 am	Coffee Break
10:30 am to 12:30 pm	Probability and Random Field Theory
12:30 pm to 1:30 pm	Lunch
1:30 pm to 2:45 pm	Interpreting Results
2:45 pm to 3:00 pm	Coffee Break
3:00 pm to 4:30 pm	ANOVA and Linear Regression

Tuesday July 30th, 2019

9:00 am to 10:15 am	Data Registration and Smoothing
10:15 am to 10:30 am	Coffee Break
10:30 am to 12:30 pm	Vector Analysis
12:30 pm to 1:30 pm	Lunch
1:30 pm to 2:45 pm	Normality and Non-parametric Analysis
2:45 pm to 3:00 pm	Coffee Break
2:45 pm to 4:30 pm	Ideal, Correct and Incorrect Uses