

# LIFE SCIENCES

seminar series

## Mark Richardson

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# Large-scale brain connectivity and dynamics in human epilepsy

**April 16, 2015**

Thursday, 15:00 – 16:00

Seminar room 114, pavilion A11

University campus Bohunice

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**Abstract:** It is not fully understood why epileptic seizures occur. From a theoretical perspective, seizures can be viewed as an emergent property of large-scale brain networks. In the fields of neuroimaging and EEG, there is much current interest in identifying large-scale brain networks and characterising abnormalities of these networks in disease states. We have taken this approach a step further, by adding dynamics to these networks. In computational models, we have shown that seizure onset depends on the interplay between network topology and the dynamics at the network nodes. We have applied this approach to data from patients and their relatives, to cast light on inherited network abnormalities that predispose to seizures.