



Département de psychiatrie
Centre de neurosciences psychiatriques
Site de Cery
CH-1008 Prilly - Lausanne

Centre de Neurosciences Psychiatriques

CNP SEMINAR ANNOUNCEMENT

Friday, June 29, 2018, 2.00 p.m.

“Translational Neuromodeling for Computational Psychiatry and Computational Psychosomatics”

Prof. Klaas Enno Stephan, MD PhD

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Invited by Kim Do
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Salle ESCALE

**Hôpital Psychiatrique de Cery
Site de Cery, CH-1008 Prilly-Lausanne**

For many brain diseases, particularly in psychiatry, we lack clinical tests for differential diagnosis and cannot predict optimal treatment for individual patients. This presentation outlines a translational neuromodeling framework which aims at establishing “computational assays” for inferring subject-specific mechanisms of brain disease from non-invasive measures of behaviour and neuronal activity. I will show how clinical theories of maladaptive cognition and aberrant brain-body interactions can guide the construction of computational assays that are based on generative models. The clinical utility of these assays is presently evaluated in ongoing prospective patient studies that address concrete clinical problems, such as treatment response prediction, as benchmarks for model validation. If successful, computational assays may help provide a formal basis for differential diagnosis and treatment predictions in individual patients and, ultimately, facilitate the construction of mechanistically grounded disease classifications.

Selected publications:

1. Frederike H. Petzschner, Lilian A.E. Weber, Tim Gard, and Klaas E. Stephan. *Computational Psychosomatics and Computational Psychiatry: Toward a Joint Framework for Differential Diagnosis*. *Biological Psychiatry* September 15, 2017; 82:421–430
2. Klaas Enno Stephan and Christoph Mathys. *Computational approaches to psychiatry*. *Current Opinion in Neurobiology* 2014, 25:85–92
3. Klaas E. Stephan, Sandra Iglesias, Jakob Heinzele, and Andreea O. Diaconescu. *Translational Perspectives for Computational Neuroimaging*. *Neuron* 87, August 19, 2015