



IWR COLLOQUIUM SUMMER SEMESTER 2024

Prof. Georgia Koppe

Interdisciplinary Center for Scientific Computing (IWR),
Heidelberg University

Dynamics and control of human cognition and behavior for mental health applications

Understanding and predicting maladaptive human behavior and cognition, which are pertinent to many psychiatric disorders, requires understanding their underlying dynamics and dynamical mechanisms. Modifying these behaviors requires control over their dynamics. My group focuses on inferring the dynamics underlying human behavioral and neural time series, utilizing both process-driven and data-driven modeling approaches. Based on these methods, we develop mental health applications where dynamics are used to predict and control future system states, or to study their generative mechanisms.

Our applications include: 1) Mobile apps that assess psychological ratings as proxies for mental health states, forecast changes over time, and use these forecasts to tailor mobile mental health exercises. 2) Web-based platforms in which we specifically tailor cognitive experimental paradigms to reliably assess complex decision-making. And 3) we develop and apply models for the reliable detection of neural dynamical systems features predictive of psychiatric dysfunction.

In this colloquium, I want to introduce to you the new RG and its members, along with current and future research directions.

**Also streamed
via Zoom**



June 12, 2024 • 16:15

Mathematikon • Conference Room / 5th Floor
Im Neuenheimer Feld 205 • 69120 Heidelberg
www.iwr.uni-heidelberg.de/events/iwr-colloquium

HGS MathComp Mixer

Prior to the IWR-Colloquium: Get-together for all members of the HGS MathComp
15:30 • Mathematikon • Common Room / 5th Floor