



Friedrich-Alexander-Universität  
Research Center for  
Mathematics of Data | MoD

## FAU MoD Lecture Series



# Finding the optimal model complexity of whole-brain models and digital twins

**Xenia Kobeleva**

RUHR-UNIVERSITÄT BOCHUM



[WWW.MOD.FAU.EU](http://WWW.MOD.FAU.EU)

#FAUMoDLecture

### WHEN

Monday **October 27, 2025**  
12:30H (Berlin time)

### WHERE

On-site / Online

Friedrich-Alexander-Universität  
Erlangen-Nürnberg (FAU). Room  
**H13 Johann-Radon-Hörsaal**  
Felix-Klein building  
Cauerstraße 11, 91058  
Erlangen. Bavaria, Germany

Live-streaming:  
<https://www.fau.tv/clip/id/59621>

Whole-brain neural mass models can effectively simulate neural activity, however the elevated model complexity of some implementations might hinder their translation to clinical practice, e.g. for digital twin applications.

In this talk we will talk about different strategies to choose the optimal level of complexity and critically evaluate potential added benefit of more sophisticated heterogeneous models.

These results might facilitate the translation of simpler and less computationally complex models to clinical applications, while maintaining the same accuracy for predictions.