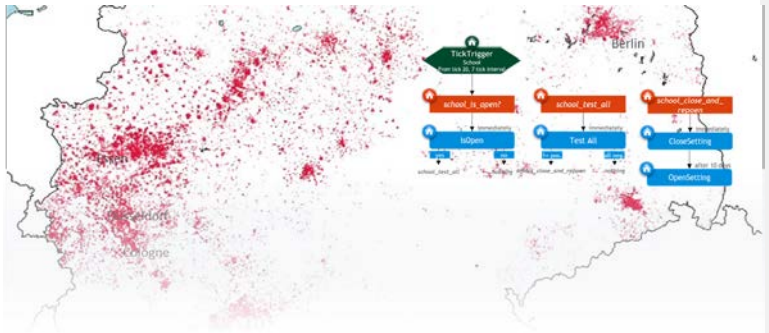
MODELLING DISEASES WITH THE

GERMAN EPIDEMIC MICROSIMULATION SYSTEM



MONID Workshop
24 – 25 November 2025

Martin Luther University Halle-Wittenberg

With funding from the:

Federal Ministry of Research, Technology and Space

Workshop

OVERVIEW

GEMS is the main outcome of the OptimAgent project, which is now in its final year of development. It is a high-performance, yet light-weight and easy-to-use agent-based simulation framework for modelling respiratory infectious diseases using a full model of the German population. It enables complex intervention strategies (vaccination, isolation, testing, contact-tracing, school-closure, and many others) to be modelled with just a few lines of code, and provides rich output analysis and visualization features. The workshop will use smaller regional- and synthetic population models (so you can use a laptop!).

PREREQUISITES

Please bring a laptop computer with *Visual Studio Code* (https://code.visualstudio.com/) and *The Julia Programming Language* (Version 1.11.5 and up) (https://julialang.org/) installed.

WORKSHOP CONTENTS

- Running simulation experiments with GEMS
- Visual exploration of simulation results
- Importing and exporting data
- Modelling NPIs scenarios and comparing intervention strategy outcomes
- Assistance if you want to try out your own ideas!

More information about MONID:

WORKSHOP AGENDA

24 November	
13:00 – 14:00	Welcome & Installation
14:00 – 14:30	Introduction to GEMS
14:30 – 15:00	Coffee Break
15:00 – 16:30	Modelling Session I
16:30 – 17:00	Recap
25 November	
09:00 – 09:30	How to Model Interventions in GEMS
09:30 – 11:30	Modelling Session II
11:30 – 12:00	Wrap-up
12:00 – 13:00	Lunch Break
13:00 – 18:00	Exercices (optional)

VENUE & REGISTRATION

Venue: Kolloquium 5.10, von-Seckendorff-Platz 1, Martin Luther University Halle-Wittenberg, 06120 Halle (Saale). The workshop will be on site.

Registration link
(first come, first served principle):

Registration