

# INVITATION TO A GUEST LECTURE

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**“About the dynamics of a SIS model without vertical transmission”**

📍 Z.0.01

📅 Monday, 20 June 2022

🕒 2:00 p.m.

## **Abstract**

The purpose of this lecture is to propose a SIS model and to carry out qualitative investigations on it. It is shown that the proposed model is biologically well-posed and that the global dynamics are entirely determined by the basic reproduction number  $R_0$ . If  $R_0 < 1$ , then the disease-free equilibrium is globally asymptotically stable: the disease dies out. At  $R_0 = 1$ , a transcritical branching takes place: a new (endemic) equilibrium arises, whose global asymptotic stability is proved with the help of the Poincaré criterion.

This is a joint work with Szilvia György

Christian Pötzsche and the Department of Mathematics look forward to seeing you at the talk!