

# INVITATION TO A GUEST LECTURE

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**“Asymptotic properties of solutions to nonlinear  
second-order difference equations”**

📍 HS 3

📅 Wednesday, 8 May 2019

🕒 4:00 p.m.

## **Abstract**

This presentation is devoted to the study of some nonlinear second-order difference equations from an asymptotic point of view. In the first problem, we consider some generalisation of the discrete version of the classical Sturm-Liouville boundary value problem on the half line. Assuming different types of growth conditions on a nonlinear part of the equation, we get the existence of a solution to our problem by Schauder’s fixed point theorem. In the second problem, we are looking for a sequence of positive homoclinic solutions to a nonlinear boundary value problem on the integers. To achieve our goal the variational technique is used. In the last problem, the existence of a solution to a nonlinear second-order equation with prescribed asymptotic behaviour is considered.  $o(ns)$ , where  $s \leq 0$ , is used as measure of approximation of the solution.

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