

# INVITATION TO THE DOCTORAL SEMINAR

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**Dr. Arora Sahiba**

University of Twente, the Netherlands

**“An anti-maximum principle for the Dirichlet-to-Neumann operator”**

📍 N.2.35

📅 Wednesday, 20 March 2024

🕒 10:00 a.m.

## Abstract

Extensive literature has been devoted to study the operators for which the (anti-)maximum principle holds. Inspired by ideas from the recent theory of eventually positive  $C_0$ -semigroups, we characterise when the Dirichlet-to-Neumann operator satisfies an anti-maximum principle.

To be precise, let  $\Omega \subseteq \mathbb{R}^d$  let a bounded domain with  $C^\infty$ -boundary and let  $A$  be the Dirichlet-to-Neumann operator on  $L^2(\partial\Omega)$ . We consider the equation

$$(\lambda - A)u = f$$

for real numbers  $\lambda$  in the resolvent set of  $A$ . We find those  $d$  for which  $f \geq 0$  implies  $u \leq 0$  for  $\lambda$  in a ( $f$ -dependent) *left* neighbourhood of the spectral bound.

This is joint work with Jochen Glück.

Andrii Mironchenko and the Department of Mathematics look forward to seeing you at the talk!