



MAFIA - the seminar you can't refuse

## Generalized Airy Operators

**Petr Siegl**

TU Graz

September 20, 2022

12:00–13:00

in T212

Fakulta jaderná a fyzikálně inženýrská ČVUT  
Trojanova 13, 12000 Praha

**Abstract:** We study the behaviour of the norm of the resolvent for non-self-adjoint operators of the form  $A := -\partial_x + W(x)$ , with  $W(x) \geq 0$ , defined in  $L^2(\mathbb{R})$ . We provide a sharp estimate for the norm of its resolvent operator as the spectral parameter diverges to  $+\infty$ . Furthermore, we describe the  $C_0$ -semigroup generated by  $-A$  and determine its norm. Finally, we discuss the applications of the results to the asymptotic description of pseudospectra of Schrödinger and damped wave operators and also the optimality of abstract resolvent bounds based on Carleman-type estimates.

The seminar is based on a joint work with A. Arnal (QUB, Belfast).