



## Institute colloquium

# Senior ISTA Colloquium: Chris Wojtan & Robert Seiringer

**Chris Wojtan & Robert Seiringer**

ISTA

Host: Jeremie Palacci

Physics Simulation for Computer Animation (Chris Wojtan) Computers are getting more and more powerful, and computer scientists are developing better and better algorithms. Despite this constant progress, it is still extremely difficult to simulate things we see in everyday life, like splashing liquids, fracturing solids, tiny bubbles and foams, and detailed water ripples. Our approach to solving these problems combines numerical algorithms for solving differential equations with geometric algorithms for computing shapes. I will present some of our research on the simulation of natural phenomena, including new methods for animating liquids, smoke, foams, fracture patterns, and knitted fabrics. These techniques have potential applications in computational physics, engineering, the motion picture and clothing industries, virtual reality, and video games. Ventures into mathematical physics: Taking Schrödinger's Equation seriously (Robert Seiringer) We present an overview of research done in the group, which concerns mainly the mathematical analysis of the many-body problem in quantum mechanics. We will try to explain the aims and challenges, and conclude with a concrete example of recent results on the polaron problem.

**Monday, November 27, 2023 11:30am - 12:30pm**

Raiffeisen Lecture Hall



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

Please find a schedule of the ISTA Shuttle on our webpage:

<https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.