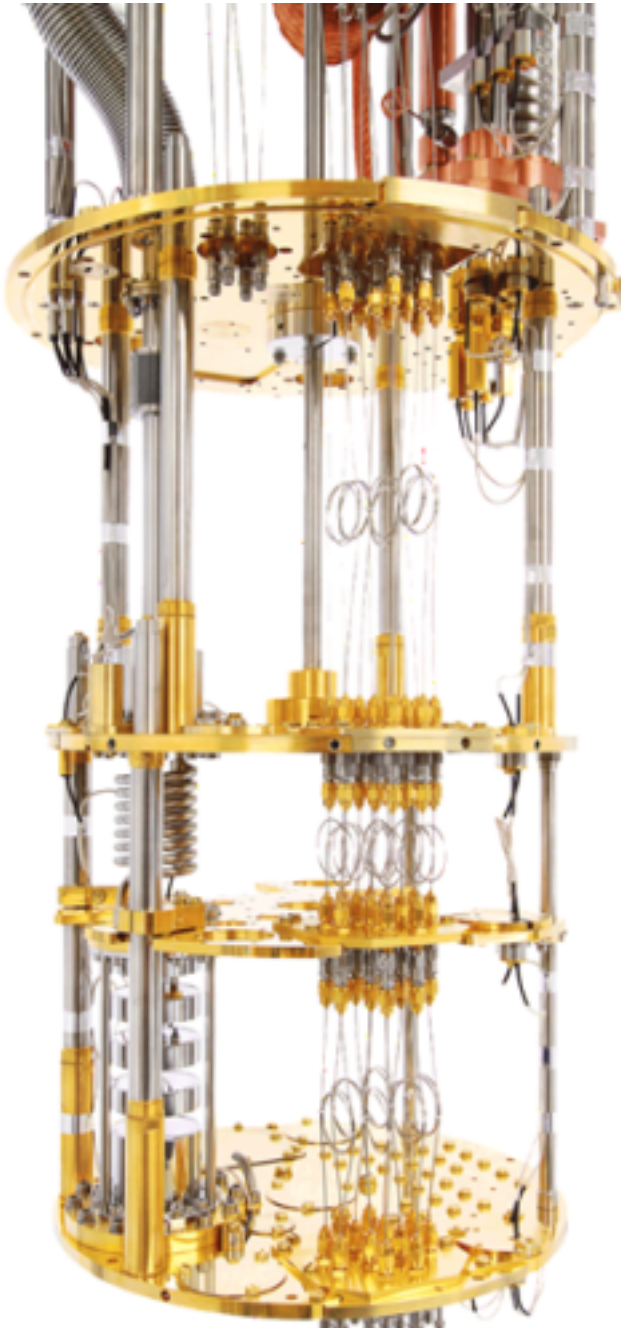

Superfluidity Laboratory (Assoc. Prof. David Schmoranzer, PhD)



The team works primarily on **experimental investigations of quantum turbulence in superfluid helium at low temperatures.**

The laboratory belongs among the twenty or so institutions in the world capable of conducting such demanding research, bringing together modern nanofabrication and cryogenic equipment capable of reaching millikelvin temperatures.

The scope of our research is highlighted by the wide range of experimental techniques at our disposal. From the smallest scales, where we use sensitive nanomechanical probes and microfluidics, including a superfluid quantum interferometer, or employ optomechanical detection of acoustic modes in two-dimensional flow, we also study flow at larger scales, e.g., by tracking the motion of magnetically levitated superconducting bodies or directly visualizing the flow by detecting laser light scattered off solid hydrogen particles.

Furthermore, the group **collaborates closely with leading Czech and international partners** and plays a significant role in **joint projects in the field of low-temperature physics**.

David Schmoranzer specializes in **low-temperature physics** and **superfluidity**. His research is focused on investigations of quantized vortices and quantum turbulence using nanomechanical resonators and microfluidic circuits.

He is an external investigator on **two UK EPSRC grants awarded to Lancaster University**, collaborates closely with **Aalto University in Finland** and spent two years at **CNRS Grenoble** developing specialised cooling techniques for ultra-low temperatures.