



universität  
wien



TECHNISCHE  
UNIVERSITÄT  
WIEN  
Vienna University of Technology



ÖSTERREICHISCHE  
AKADEMIE DER  
WISSENSCHAFTEN



The **Vienna Center for Quantum Science and Technology**  
(**VCQ**) invites you to a

## COLLOQUIUM TALK

by

**Kirk W. Madison**

*(University of British Columbia)*

### *A Quantum Sensor for Vacuum Metrology*

The development of atom based clocks has revolutionized time and frequency standards. In addition, atoms have been used to realize exquisitely sensitive accelerometers, gravimeters, and magnetometers as well as EM wave detectors and quantum transducers. In this talk, we will review the use of ensembles of single atoms for vacuum metrology. Notably, we show that an atom is a self-calibrating quantum sensor that makes possible accurate pressure and flux measurements for any species in the ultra-high pressure regime ( $<10e-7$  Pa).

**Monday, 13<sup>th</sup> June 2022,**  
**17:15 get-together with coffee and snacks**

Main Lecture Hall at TU Wien, Atominstitut, Stadionallee 2, 1020 Vienna

The seminar talk will be preceded by a VCQ Student talk at 17:45  
and will be announced later on

**Host: Markus Aspelmeyer**

for further information and the zoom-link please visit

[vcq.quantum.at/colloquium-ss-22](https://vcq.quantum.at/colloquium-ss-22)