

# CESQ Colloquium

**Tuesday June 3 @ 3 PM**

**Seminar Room, Centre Européen de Sciences Quantiques,  
Campus de Cronenbourg**

## **Stefan Willitsch**

**University of Basel**

### *Quantum technologies for trapped molecular ions*

Molecules are quantum systems of prime significance in a variety of contexts ranging from physics over chemistry to biology. In spite of their importance, the development of quantum technologies for molecules has remained a long-standing challenge due to their complex energy-level structures. Trapped molecular ions are particularly attractive in this context as it is possible to observe, manipulate and control single isolated molecules under precisely controlled conditions. In the talk, we will highlight new experimental methods for the detection, preparation and manipulation of the quantum states of single trapped molecular ions and discuss applications of these techniques in the realms of precision molecular spectroscopy, quantum science and chemistry.

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