

## Symposium Quantum Signatures in Magnetism (SYQS)

jointly organized by  
 the Magnetism Division (MA),  
 the Low Temperature Physics Division (TT),  
 the Semiconductor Physics Division (HL), and  
 the Surface Science Division (O)

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Magnetism is a quantum phenomenon. Nevertheless, most studies investigate large samples containing many spins, such that the magnetic properties can be described and understood in terms of classical physics. Of particular current interest are magnetization dynamics viz. magnetization relaxation and damping, since the dynamical properties of magnets are key for the fast magnetic switching employed in a manifold of applications. Magnetization dynamics are typically studied using magnetic resonance techniques. The advent of quantum information technologies based on superconducting circuits has triggered a revolution in magnetic resonance spectroscopy. Single photon viz. single spin sensitivity, and the possibility to probe magnetization dynamics employing tailored quantum states, offer a completely new toolbox for modern experiments addressing the quantum properties of magnets. This symposium brings together experts from different but overlapping fields of magnetization dynamics, superconducting quantum circuits, quantum metrology in semiconductors, and in a broader sense quantum technology based solid-state spectroscopy aiming to provide an overview of the recent exciting developments.

## Overview of Invited Talks and Sessions

(Lecture room H1)

### Invited Talks

SYQS 1.1	Wed	15:00–15:30	H1	<b>Magnonic macroscopic quantum states and supercurrents</b> — ●BURKARD HILLEBRANDS, DMYTRO A. BOZHKO, ALEXANDER A. SERGA
SYQS 1.2	Wed	15:30–16:00	H1	<b>Elementary excitations of magnetic insulators and its heterostructures with metals</b> — ●GERRIT BAUER
SYQS 1.3	Wed	16:00–16:30	H1	<b>Cavity Spintronics</b> — ●CAN-MING HU
SYQS 1.4	Wed	16:45–17:15	H1	<b>Hybrid Quantum Systems - Coupling Color Centers to Superconducting Cavities</b> — ●JOHANNES MAJER
SYQS 1.5	Wed	17:15–17:45	H1	<b>Quantum enhanced sensing with single spins in diamond</b> — ●FEDOR JELEZKO

### Sessions

SYQS 1.1–1.5	Wed	15:00–17:45	H1	<b>Quantum Signatures in Magnetism</b>
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