

Symposium Higgs Modes in Condensed Matter and Quantum Gases (SYHM)

jointly organized by
 the Low Temperature Physics Division (TT),
 the Dynamics and Statistical Physics Division (DY),
 the Magnetism Division (MA), and
 the Surface Science Division (O)

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The discovery of the Higgs particle in 2012 at CERN has a large impact beyond the field of high-energy physics and triggered intense research in condensed matter physics. A Higgs mode emerges as a collective oscillation of order parameter amplitude in various ordered phases of condensed matter systems, such as Bose gases in optical lattices, superfluid ^3He , superconductors, density-wave systems, and magnetic materials. Understanding the fundamental role of the Higgs modes is expected to lead to a unified description of these condensed matter systems. In this Symposium recent developments of research on Higgs modes in various condensed matter systems and quantum gases are presented, covering theoretical aspects as well as latest experimental developments; the focus will be on collective excitations in superconductors.

Overview of Invited Talks and Sessions

(Lecture room: H 0105)

Invited Talks

SYHM 1.1	Wed	15:00–15:30	H 0105	Amplitude or Higgs Modes in Condensed Matter — ●CHANDRA VARMA
SYHM 1.2	Wed	15:30–16:00	H 0105	Higgs Particles for Systems with U(1) Symmetry in Two Dimensions — ●LODE POLLET
SYHM 1.3	Wed	16:00–16:30	H 0105	Massive Photons and the Anderson-Higgs Mechanism in Superconductors — ●DIRK VAN DER MAREL
SYHM 1.4	Wed	16:45–17:15	H 0105	Amplitude Higgs Mode in 2H-NbSe₂ Superconductor — ●MARIE-AUDE MÉASSON, ROMAIN GRASSET, YANN GALLAIS, MAX CAZAYOUS, ALAIN SACUTO, PIERRE RODIÈRE, LAURENT CARIO
SYHM 1.5	Wed	17:15–17:45	H 0105	The Higgs Mode in Disordered Superconductors Close to a Quantum Phase Transition — ●AVIAD FRYDMAN, DANIEL SHERMAN, UWE S. PRACHT, BORIS GORSHUNOV, MARTIN DRESSEL

Sessions

SYHM 1.1–1.5	Wed	15:00–17:45	H 0105	Higgs Modes in Condensed Matter and Quantum Gases
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