

**KOLLOQUIUM der Forschungsplattform MMM** jointly with

**25. PAULI COLLOQUIUM**

The research platform MMM „Mathematics-Magnetism-Materials“, jointly with the Fakultät für Mathematik, the Fakultät für Physik, together with the **Wolfgang Pauli Institut**

kindly invite you to the talk of **Burkard Hillebrands** (RPTU Kaiserslautern)

**Time: Tuesday, 29. Jan 2024, 16:00 – 17:00**

**Place: Skylounge, 12<sup>th</sup> floor, Oskar-Morgenstern-Platz 1, 1090 Wien**

1) 15h45 – 16h00 : **Coffee & Cake**

2) 16h00 – 16h05 : **Introduction** : Andrii Chumak (MMM @ U.Wien & WPI)

**3) 16.05 – 17.00 Uhr :**

**Burkard Hillebrands** (RPTU Kaiserslautern)



**“Transport phenomena in Bose–Einstein  
magnon condensates”**

**Abstract:**

The field of magnonics is seen as a path to better information processing technology. The basic idea is to use magnons, the quanta of spin waves, as information carriers. Magnonic Bose-Einstein condensates, with their unique properties, are of particular interest and could serve as a crucial entity. They can be generated at room temperature, enable wave-based computational applications such as quantum classical qubit computation, and are spatially localized due to their zero-group velocity. We will discuss the transport properties of magnon BECs via the excitation of magnon supercurrents and address the application potential.

4) 17h00 – 17h45 : **Drinks & Sandwiches**

*Norbert J Mauser*  
(director WPI & speaker MMM)

*Robin Golser*  
(Dean Physics)

### Short Biography:

**Burkard Hillebrands** is full professor of experimental physics at University of Kaiserslautern. After studies at the U. Köln and a postdoctoral stay at the Optical Sciences Center in Tucson, Arizona he was associate professor at TU Karlsruhe in 1994 and from 1995 on full professor at U. Kaiserslautern. From 2006 to 2014 he was Vice President for Research, Technology and Innovation U. Kaiserslautern. From 2016 to 2017 he served as Scientific Director of the Leibniz Institute for Solid State and Materials Research Dresden.

His research field is experimental magnetism, in particular magnonics. He is particularly interested in nonlinear magnonic phenomena, magnonic crystals, magnon gases, magnon condensates and magnonic supercurrent phenomena in view of applications in novel information technologies such as magnon logics.

He has published more than 430 refereed articles, book contributions, and several patents.

In 2019-2022 he served as President of the European Magnetism Association. In 2015-2017 he was Chair of the International Union of Pure and Applied Physics (IUPAP), Commission C9: Magnetism. He is member, Chair of the Class of Mathematics and Natural Sciences, and Vice President of the Academy of Sciences and Literature, Mainz. He is member of the National Academy of Science and Engineering (acatech). He is IEEE Fellow, APS Fellow and Fellow of the Institute of Physics, London. In 2016 he received an ERC Advanced Grant of the European Commission. In 2023 he received the Achievement Award of the IEEE Magnetics Society. He served on the Administrative Committee of the IEEE Magnetics Society and was Honors&Awards Chair in 2013-2018. Since 2018, he is Chair and Member of the Scientific Advisory Board of the Helmholtz Center Dresden-Rossendorf (HZDR), and also Member of the HZDR Supervisory Board.