

International Workshop MAP Project

Quantum Materials and Chiral Phenomena: Fundamental Science and Applications

27 - 28 November 2025

Sala B, Centro Congressi Federico II, Naples



The workshop is organized by the Institute SPIN of CNR within the bilateral Italy - Korea project MAP

PROGRAMME **27** NOVEMBER 2025

09.20|09.30 **Opening & welcome addresses**

Session chair: Mario Cuoco

09.30|10.00 Optical signatures of spin symmetries in unconventional magnets
Julen Ibañez-Azpiroz, Materials Physics Center, Spain

10.00|10.30 Relativistic Spin-momentum locking in altermagnets
Carmine Autieri, MagTop Warsaw, Poland & CNR SPIN, Italy

10.30|10.50 **Coffee break**

Session chair: Changyoung Kim

10.50|11.20 A-approach in ARPES and chiral topological superconductivity in PtBi_2
Sergey Borisenko, IFW-Dresden, Germany

11.20|11.50 Imaging Twisted Electrons by Angle-Resolved Photoemission Spectroscopy
Maximilian Ünzelmann, University of Würzburg, Germany

11.50|12.20 Electronic structure and charge-density wave modulation in monolayer TiSe_2
Bruno Saika, University of St. Andrews, UK

12.20|14.00 **Lunch break**

Session chair: Antonio Vecchione

14.00|14.30 Tunable room-temperature nonlinear Hall effect from surfaces of elementary bismuth thin films
Denys Makarov, HZDR, Germany

14.30|15.00 Hallmarks of Spin Textures for High-Harmonic Generation in two-dimensional materials
Francesco Gabriele, CNR-SPIN, Italy

15.00|15.30 Three-Dimensional Polar Topology in Ferroelectric Nanoparticle
Yongsoo Yang, KAIST, Korea

15.30|15.50 **Coffee break**

Session chair: Carmine Ortix

15.50|16.20 Low-density superconductivity in the presence of strong spin-orbit coupling
José Lorenzana, CNR-ISC, Italy

16.20|16.50 Filtering Spin and Orbital Moment in Achiral Systems
Luciano Jacopo D'Onofrio, CNR-SPIN, Italy

16.50|17.20 Dirac-like fermions anomalous magneto-transport in a spin-polarized oxide two-dimensional electron system
Yu Chen, CNR-SPIN, Italy

Session chair: Yeong Kwan Kim

09.00 | 09.30 Skyrmions: from hadrons to magnetic texture

Jung Hoon Han, SKKU, Korea

09.30 | 10.00 Spintronics and Correlation Effects in Two-Dimensional Magnetic Materials: From Fe_nGeTe_2 to p-Wave Magnets

Andrea Droghetti, University of Venice, Italy

10.00 | 10.30 Magnetic and Chiral skyrmion materials

Geetha Balakrishnan, University of Warwick, UK

10.30 | 10.50 **Coffee break**

Session chair: Daniela Stornaiuolo

10.50 | 11.20 Controlling the functionality of quantum materials by light

Daniele Fausti, Friedrich-Alexander-Universität, Germany & University of Trieste, Italy

11.20 | 11.50 The dual role of killer Jahn–Teller modes and screw symmetry in ferromagnetic two-dimensional hybrid perovskites

Alessandro Stroppa, CNR-SPIN, Italy

11.50 | 12.20 Towards the twisting of nickelate membranes

Daniele Preziosi, IPCMS-CNRS, France & UCM, Spain

12.20 **Closing remarks**



Workshop Chairs

Rosalba Fittipaldi, CNR-SPIN, Italy

Yeong Kwan Kim, KAIST, Korea

Scientific Committee

Mario Cuoco, CNR-SPIN, Italy

Changyoung Kim, Seoul National University, Korea

Maria Teresa Mercaldo, University of Salerno, Italy

Daniela Stornaiuolo, University of Naples, Italy

Antonio Vecchione, CNR-SPIN, Italy

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Abstract book available here:



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