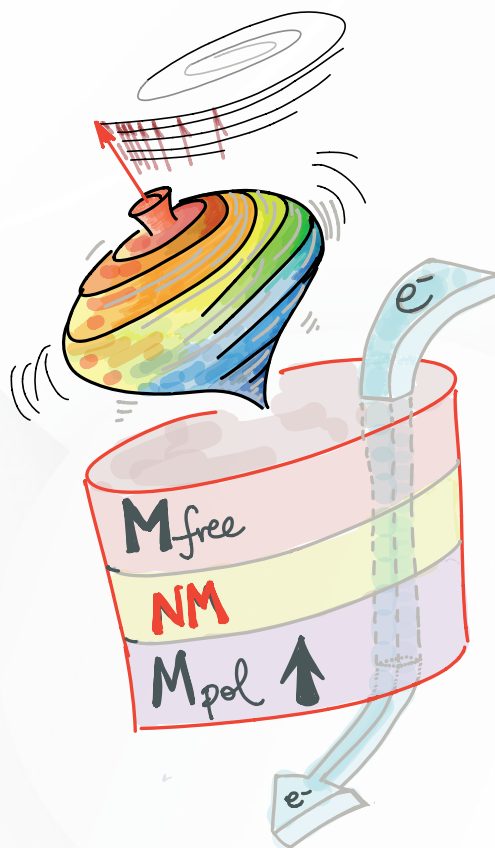
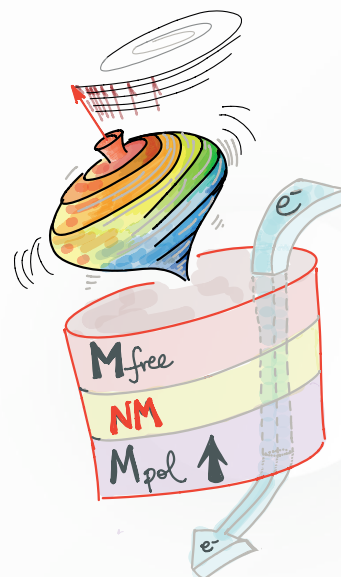


2021 ESpinRed SCHOOL ON SPINTRONICS

2021 May 17th - 31st



PROGRAMA



May 17th – Introduction

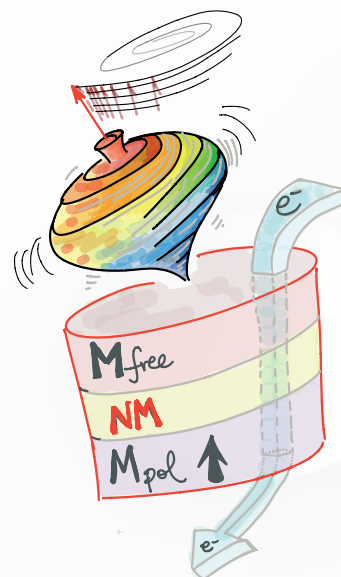
- 15:00 h **Welcome and technical comments**
Fernando Bartolomé
(INMA, CSIC – Universidad de Zaragoza, Spain)
- 15:20 h **Why Spintronics**
Jairo Sinova
(Johannes Gutenberg Universität Mainz, Germany)
- 16:25 h **Spin dependent transport: GMR and TMR**
Jose M^a de Teresa
(INMA, CSIC – Universidad de Zaragoza, Zaragoza, Spain)
- 17:30 h **Spin injection, transport and manipulation**
Félix Casanova
(CIC-Nanogune, San Sebastián, Basque Country, Spain)

May 19th – Spin textures and Magnetization Dynamics

- 15:00 h **DM interactions and skyrmions**
André Thiaville
(Laboratoire de Physique des Solides Université Paris-Saclay CNRS, Orsay, France)
- 16:00 h **Magnetization Dynamics and Damping (IEEE-MS Distinguished Lecture)**
Tim Mewes
(Department of Physics and Astronomy, The University of Alabama, Tuscaloosa AL, USA)
- 17:20 h **Spin Waves Spintronics**
Ferrán Macià
(Departament de Física, Universitat de Barcelona, Catalonia, Spain)
- 18:20 h **Ferromagnetic resonance**
Adriana Figueroa
(ICN2, CSIC and BIST, Barcelona, Spain)

May 21th – Spin Orbit, Hall effects, Theory and Microscopies

- 15:00 h **Theoretical Spintronics – micromagnetism & beyond**
Joo-Von Kim
(U Paris Saclay – CNRS)
- 16:00 h **Spin Orbit interactions and Spin Hall effects**
Sergio O. Valenzuela
(ICN2, CSIC and BIST, Barcelona, Spain)
- 17:15 h **STT and SOT oscillators**
Andrew Kent
(New York University, NY, USA)
- 18:15 h **Synchrotron microscopies on spintronics**
Lucia Aballe
(ALBA, CELLS – Barcelona, Spain)



May 24th – Emerging materials for spintronics: oxides, 2D systems, etc

- 15:00 h Antiferromagnetic spintronics
Tomas Jungwirth
(University of Nottingham, UK)
- 16:10 h Graphene and 2D Spintronics
Stephan Roche
(ICN2, CSIC and BIST, Barcelona, Spain)
- 17:30 h Molecular Spintronics
Luis Hueso
(CIC-Nanogune, San Sebastián, Basque Country, Spain)

May 26th – Spin textures + Contributed Presentations

- 15:00 h Skyrmions in atomically thin films
Kyrsten von Bergmann
(Universität Hamburg, Germany)
- 16:10 h MFM techniques and spin texture
Agustina Asenjo
(ICMM – CSIC, Madrid, Spain)
- 17:30 h Contributed Presentations – Session 1

May 28th – New applications, oxitronics, topology...

- 15:00 h Basic blocks for biologically-inspired computation
Julie Grollier
(Unité Mixte de Physique, CNRS-Thales, Université Paris-Saclay, Palaiseau, France)
- 16:10 h Oxide Spintronics
Manuel Bibes
(Unité Mixte de Physique, CNRS-Thales, Université Paris-Saclay, Palaiseau, France)
- 17:30 h Topological Charges and Emergent Fields
María Vélez
(Universidad de Oviedo, Asturias, Spain)

May 31st – Future Applications + Contributed Presentations

- 15:00 h Spin Caloritronics
Myriam Aguirre
(INMA, CSIC – Universidad de Zaragoza, Spain)
- 16:10 h Ultrafast magnetism and Thz Spintronics
To be confirmed
- 17:30 h Contributed Presentations – Session 2

2021 ES_{pin}Red School on Spintronics

Contributed Talks

Session 1 – 17:30h

17:30h – 17:45h

1. Influence of shape anisotropy on magnetization reversal induced by non-linear down chirp pulse

M. T. Islam, M. A. S. Akanda, M. A. J. Pikul, X. S. Wang, X. R. Wang

Physics Discipline, Khulna University, Bangladesh

17:45h – 18:00h

2. Micromagnetics of Chemical Barriers Inserted within Permalloy Cylindrical Nanowires: Towards the Control of Domain Wall Motion

L. Álvaro Gómez^{1,2,3}, M. Schöbitz¹, C. Fernández González^{2,3}, S. Ruiz Gómez⁶, I.M. Andersen⁷, N. Mille⁵, J. Hurst¹, M. Foerster⁶, L. Aballe⁶, R. Belkhou⁵, J.C Toussaint⁴, L. Cagnon⁴, C. Thirion⁴, A. Masseboeuf¹, D. Gusakova¹, L. Pérez García^{2,3}, O. Fruchart¹

1. Univ. Grenoble Alpes/CEA/CNRS, SPINTEC, 38054, Grenoble, France
2. IMDEA Nanociencia, Campus de Cantoblanco, 28049 Madrid, Spain
3. Dpto. de Física de Materiales, Universidad Complutense de Madrid, 28040 Madrid, Spain
4. Univ. Grenoble Alpes/CNRS, Institut Néel, 38000 Grenoble, France
5. Synchrotron SOLEIL, l'Orme des Merisiers, Saint-Aubin, FR-91192 Gif-sur-Yvette Cedex, France
6. Alba Synchrotron Light Facility, CELLS, 08290 Cerdanyola del Vallès, Barcelona, Spain
7. Centre d'Elaboration de Materiaux et d'Etudes Structurales, 31055, Toulouse, France

18:00h – 18:15h

3. Independent control of the crystallinity and composition of CuBi nanowires

A. Guedeja-Marrón¹, C. Fernández-González^{1,2}, S. Ruiz-Gómez³, L. Pérez^{1,2}, M. Varela¹, P. Perna²

- 1 Dpto. Física de Materiales - Universidad Complutense de Madrid
- 2 IMDEA Nanoscience. Madrid (Spain)
- 3 BL24-CIRCE - ALBA Synchrotron

18:15h – 18:30h

4. Propagation of Bloch Points in cylindrical nanowires driven by spin-polarized currents and Oersted field

J.A. Fernandez-Roldan^{1,2}, C. Bran², M. Vázquez² and O. Chubykalo-Fesenko².

1. Department of Physics, University of Oviedo, Oviedo, Spain
2. Institute of Materials Science of Madrid, ICMM-CSIC, Spain

18:30h – 18:45h

7. Transition metal oxides and their films

Mohmad Asif Khan

Department of Physics, Government Degree College for Women, Anantnag, Kashmir, India

18:45h – 19:00h

8. II-VI semiconductor oxides for spintronic applications

Arpana Agrawal,

Department of Physics, Shri Neelkantheshwar Government Post-Graduate College, Khandwa, India

19:00h – 19:15h

5. Observation of Exchange bias in Fe thin film implanted with F+ ion

Sagar Sen

Department of Physics Maharaja Bhoj Government PG College, Dhar, India

19:15h – 19:30h

6. Strain-induced magnetic transition in CaMnO₃ ultrathin films

A. López Pedroso^{1,2}, M. A. Barral^{2,3}, M. E. Graf⁴, A. M. Llois^{2,3}, M. H. Aguirre^{5,6,7}, L. B. Steren^{1,2}, and S. Di Napoli^{2,3}

- [1] Laboratorio de Nanoestructuras Magnéticas y Dispositivos, Departamento de Física de la Materia Condensada, Centro Atómico Constituyentes, 1650 San Martín, Provincia de Buenos Aires, Argentina.
- [2] Instituto de Nanociencia y Nanotecnología (INN CNEA-CONICET), 1650 San Martín, Provincia de Buenos Aires, Argentina.
- [3] Departamento de Física de la Materia Condensada, GlyA-CNEA, 1650 San Martín, Provincia de Buenos Aires, Argentina.
- [4] Instituto de Física Rosario (CONICET-UNR), Rosario S2000 EKF, Argentina
- [5] Instituto de Nanociencia de Aragón and Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza, E-50018 Zaragoza, Spain.
- [6] Departamento de Física de la Materia Condensada, Universidad de Zaragoza, E-50009 Zaragoza, Spain.
- [7] Laboratorio de Microscopías Avanzadas, Universidad de Zaragoza, E-50018 Zaragoza, Spain.

2021 ESpinRed School on Spintronics

Contributed Talks

Session 2 – 17:30h

17:30h – 17:45h

1. Ab initio study of disorder in Bismuthene

Armando Pezo

CINAM-Aix University, FRANCE

17:45h – 18:00h

2. Nanoscale manipulation of magnetic domains by interfacial strain-induced proximity

J. Rodríguez-Álvarez¹, I. Valmianski², A. Fraile Rodríguez¹, M. García del Muro¹, C. Wolowiec², F. Kronast³, J. G. Ramirez⁴, Ivan K. Schuller², A. Labarta¹, X. Batlle¹

1. Departament de Física de la Matèria Condensada, Institut de Nanociència i Nanotecnologia (IN2UB), Universitat de Barcelona, 08028 Barcelona, Spain

2. Department of Physics and Center for Advanced Nanoscience, University of California San Diego, La Jolla, CA 92093, USA

3. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, 12489 Berlin, Germany

4. Department of Physics, Universidad de los Andes, Bogotá 111711, Colombia.

18:00h – 18:15h

3. Study of the effective coupling between magnetic skyrmions mediated by electronic dynamics

Esteban Iroulart, Diego Rosales

Instituto de Física de Líquidos y Sistemas Biológicos (IFLYSIB), UNLP-CONICET, Facultad de Ciencias Exactas, La Plata, Argentina,

Departamento de Física, Facultad de Ciencias Exactas, Universidad Nacional de La Plata, La Plata, Argentina

18:15h – 18:30h

4. Modelling of magneto-thermoelectric response from a domain wall

Elías Saugar, T. Ostler, C. Barton, R. Puttock, P. Klapetek, O. Kazakova, and O. Chubykalo-Fesenko.

Instituto de Ciencia de Materiales de Madrid – CSIC, Madrid, Spain

18:30h – 18:45h

5. Second Harmonic Study of the Self-Spin-Orbit Torques in GdFeCo Ferrimagnetic Alloys

Héloïse Damas¹, David Céspedes-Berrocal^{1,2}, Davide Maccariello³, Aldo Arriola-Córdova^{1,2}, Elodie Martin¹, Jean-Loïc Bello¹, Ping Tang⁴, Pierre Vallobra¹, Yong Xu¹, Sylvie Migot¹, Jaafar Ghanbaja¹, Shufeng Zhang⁴, Stéphane Mangin¹, Christos Panagopoulos⁵, Vincent Cros³, Michel Hehn¹, Sébastien Petit-Watelot¹, Albert Fert³ and Juan-Carlos Rojas-Sánchez¹

1 Université de Lorraine, CNRS, Institute Jean Lamour, F-54000 Nancy, France

2 Universidad Nacional de Ingeniería, Rímac 15333, Peru

3 Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, 91767 Palaiseau, France

4 Department of Physics, University of Arizona, Tucson, Arizona 85721, USA

5 Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, 637371 Singapore

18:45h – 19:00h

6. Damping like torque in monolayer 1T-TaS₂/Py Heterostructure

Sajid Husain

Mixed physics Unit CNRS/Thales, University Paris-Saclay, France.

19:00h – 19:15h

7. Spin wave probing of polarized transport in ferromagnets

José Solano

Institute of Physics and Chemistry of Materials of Strasbourg, France

19:15h – 19:30h

8. Imaging of gigahertz magnetization dynamics of domain configurations and dipole skyrmions in Fe/Gd multilayers

P. Che¹, M. Heigl², A. Mucchietto¹, K. Baumgaertl¹, J. R. Soh¹, J. Gräfe³, M. Bechtel⁴, M. Weigand⁴, G. Schuetz³, M. Albrecht², and D. Grundler^{1,5}

1 Laboratory of Nanoscale Magnetic Materials and Magnonics, Institute of Materials (IMX), École Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland.

2 Institute of Physics, University of Augsburg, D-86159 Augsburg, Germany.

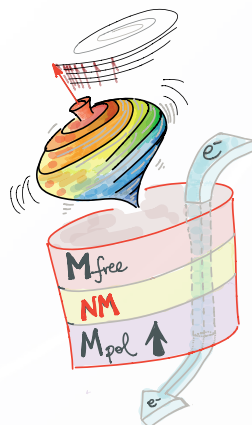
3 Max Planck Institute for Intelligent Systems, Heisenbergstraße 3, 70569 Stuttgart, Germany.

4 Helmholtz-Zentrum Berlin für Materialien und Energie, Albert-Einstein-Straße 15, 12489 Berlin, Germany.

5 Institute of Microengineering (IMT), École Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland.

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CONGRESOS CIENTÍFICO-MÉDICOS

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