

DETAILED PROGRAM

The X-LAW3M is organized in invited (six plenary and twenty semi-plenary) and contributed talks (twenty four) as well as posters sessions (three). These conferences will take place at the **Aula Magna**. There are also two symposia devoted to Biomagnetism and Magnetic Oxides that will take place on Tuesday 9th and Thursday 11th respectively (**Salon Azul**).

Sunday - April 7th

18:00-20:00 **Welcome Reception and Registration at the Hall Aula Magna, Facultad de Derecho, UBA.**

Monday - April 8th

08:30 **Registration - Hall Aula Magna**

09:00 **Opening**

09:30 – 10:30 ***Spin current phenomena: new impetus to Spintronics.* S. Machado Rezende.** Universidad de Pernambuco, Brazil

10:30 – 11:00 Coffee Break

11:00 – 11:30 ***Quantum spintronic phenomena.* J. Carlos Egues .** Univ. de Sao Paulo, Brazil.

11:30 – 12:00 ***Spin transfer induced dynamics of magnetic solitons in nanostructures: from multivortices to magnetic skyrmions* V. Cros.** Unite Mixte de Recherche CNRS-Thales, France

12:00 – 12:15 ***Magnetic anisotropy enhancement by interface exchange coupling in bimagnetic nanoparticles.* E. Winkler.** Centro atómico Bariloche, Argentina

12:15 – 12:30 ***Influence of the surface spin disorder effects in the magnetic hyperthermia response in magnetite and nickel ferrite nanoparticles.* C. Gomez Polo.** Depto. Física. Univ. Pública de Navarra Campus de Arrosadía, Pamplona. Spain.

12:30 – 14:30 Lunch

14:30 – 15:00 ***Fabrication of individual nano-magnets and nano-magnet arrays by Electron-beam-induced deposition and Focused-ion-beam modification.* A. Berger,** Nanogune, San Sebastian, Spain

15:00 – 15:30 ***Magnetic properties of low-dimensional systems: confined atoms, small clusters, and nanoparticles with complex morphologies.*** R. Guirado Lopez. Universidad San Luis Potosí, Mexico .

15:30 – 15:45 ***Stability of ferromagnetic patterns inscribed on arrays of magnetic nanocylinders.*** E. Vogel . Universidad de La Frontera, Temuco, Chile .

15:45 – 16:15 Coffee Break

16:15 – 16:45 ***Interaction between dynamical magnetic effects and electrical transport in nano and atomic structures.*** M. Viret . CEA Saclay, France

16:45 – 17:00 ***Correlated quenched disorder in vortex matter: the role of twin boundaries in BaFeCoAs pnictides.*** G. Pasquini, Dto. de Física, FCEyN, UBA; IFIBA, CONICET; Argentina.

17:00 – 17:15 ***Electrical conductivity of a single manganite nanotubes: comparison of $\text{La}_{2/3}\text{Ca}_{1/3}\text{MnO}_3$ and $\text{La}_{2/3}\text{Sr}_{1/3}\text{MnO}_3$ systems.***R. Sanchez. Centro Atómico Bariloche, Argentina

17:15 – 19:00 POSTER SESSION A

02- Magnetism and superconductivity

06- Magnetic nanostructures, surfaces and interfaces

Tuesday – April 9th

09:30 – 10:30 ***Magnetic anisotropy in electroplated Co and CoFe nanowire arrays.*** M. Vazquez . CSIC, Madrid, Spain

10:30 – 11:00 Coffee Break

11:00 – 11:30 ***Electronic and heat transport in molecular junctions.*** C. Balseiro. Centro atómico Bariloche, Argentina

11:30 – 12:00 ***Charge ordering in a pure spin model: spin-ice.*** S. Grigera Universidad Nacional de La Plata, Argentina

12:00 – 12:15 ***Microstructure, geometry and microwave behavior of Co nanowire arrays.*** M. Pasquale. INRIM, Divisione Elettromagnetismo, Torino Italy .

12:15 – 12:30 ***Controlling nanomagnets with light: from domain wall kick-offs to spin-photon hybrids.*** L. Bogani. Physikalisches Institut, University of Stuttgart, Stuttgart, Germany .

12:30 – 14:30 Lunch

14:30 – 15:00 ***Magnon-drag thermopile*** S. Valenzuela. Universidad Autonoma de Barcelona, Spain

15:00 – 15:30 ***Structure and magnetism of MnGa epilayers on GaAs(111)B.*** D. H. Mosca. Univ. de Parana, Curitiba, Brazil

15:30 – 15:45 ***Interacting magnetic nanodisks pairs studied by magnetic vortex echoes.*** J. P. Sinnecker CBPF, Brazil

15:45 – 16:15 Coffee Break

16:15 – 16:30 ***High-magnetic field magnetostructural coupling in URu₂Si₂.*** V. Correa, Centro atómico Bariloche, Argentina

16:30 – 16:45 ***A quantum exchange bias model for a ferromagnet and an antiferromagnet coupled across a non magnetic interlayer.*** M. Kiwi. Dto de Física, Universidad de Chile , Santiago, Chile

16:45 – 17:00 ***Densification of Nd-Fe-B Powders by Hydroextrusion*** W. Kaszuwara. Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw, Poland.

17:00 – 19:00 POSTER SESSION B

- 01- Electronic structure and correlation effects in magnetic systems
- 03- Magneto-transport, spin electronics and magnonic crystals
- 04- Organic & Carbon based spintronics
- 05- Magnetic shape memory, magnetoelastic and multifunctional materials
- 07 - Micromagnetics, magnetization processes and magnetization dynamics
- 08 - Magnetism in metals, alloys and intermetallics
- 09- Diluted Magnetic semiconductors
- 11- Soft magnetic materials and related applications
- 12 - Molecular magnetism

SYMPOSIUM BIOMAGNETISM (Salon Azul)

- 11:00 – 11:45 ***Self-Assembled Magnetic Gene Delivery Vectors: Physico-chemical and biophysical aspects.*** O. Mykhaylyk. Technische Universität, Munchen, Germany
- 11:45 – 12:15 ***Field dependent transition to the non-linear regime in magnetic hyperthermia experiments of distinct ferrite-based nanoparticles*** A.F. Bakuzis Universidade Federal de Goiás, Brazil
- 12:15 – 12:30 ***Experiments with functionalized SPIONs for applications in hyperthermia: analysis of the response to an alternating magnetic field.*** M. L. Mojica. Centro atómico Bariloche, Argentina
- 12:30 – 12:45 ***Magnetic nanoparticles with vortex and exchange bias for hyperthermia cancer therapy*** F. Garcia. Brazilian Synchrotron Light Laboratory. Campinas, Brazil
- 12:45 – 14:30 Lunch
- 14:30 - 15:15 ***Biomedical nanomagnetism: advances in in vivo imaging and therapy.*** K. Krishnan. University of Washington, Seattle, U.S.A.
- 15:15 – 15:45 ***Applications of functionalised iron oxide nanoparticles in medicine*** R. Zysler Centro Atómico Bariloche, Argentina
- 15:45 – 16:15 Coffee Break
- 16:15 – 16:40 ***Novel gene therapy approaches for cancer treatment: potential improvement by the use of magnetic nanoparticles*** L. Policastro, Centro Atómico Constituyentes, Argentina
- 16:40 – 17:05 ***Nanomaterials for Biomedical Applications: Magnetic Hyperthermia and Magnetofection*** F. Sanchez. Universidad Nacional de La Plata, Argentina

- 17:05 – 17:30 ***Improving magnetic properties of iron oxide nanoparticles from the synthesis.*** M. P. Morales. Instituto de Ciencia de Materiales de Madrid, Spain.
- 17:30 – 17:45 ***In Vitro experiments of Superparamagnetic Iron-Oxide Nanoparticles functionalized with PEGlated phospholipids.*** M. Vazquez Mansilla. Centro Atómico Bariloche, Argentina

Wednesday – April 10th

09:30 – 10:30 ***Atomically Tailored Nanomagnets and their use for Atomic-Level Spintronics.*** R. Wiesendanger. Institute of Applied Physics, University of Hamburg, Germany.

10:30 – 11:00 Coffee Break

11:00 – 12:00 ***Topologically protected Spin Textures at Metal Surfaces.*** S. Blügel. Peter Grünberg Institut & Institute for Advanced Simulation Julich, Germany

12:00 – 12:30 ***Magnetic properties of nanowires and nanotubes*** J. Escrig Murua
Universidad Santiago de Chile, Chile.

12:30 – 13:00 ***Soft X-ray Magneto-Optics: probing magnetism by resonant scattering experiments*** M. Sacchi. Institut des Nanosciences de Paris, France.

Free Afternoon

Thursday – April 11th

09:30 – 10:30 ***Orbital and electronic reconstructions at surfaces and interfaces of transition metal oxides.*** J. Fontcuberta . Institut de Ciencia de Materials de Barcelona, Spain

10:30 – 11:00 Coffee Break

11:00 – 11:30 ***Defect spectroscopy using photoconductivity and photoluminescence combined with temperature dependent conductivity measurements.*** M. Villafuerte. Universidad Nacional de Tucumán, Argentina.

11:30 – 12:00 ***Chirality switching and ultra-fast vortex domain wall motion in ferromagnetic nanotubes.*** P. Landeros. Universidad Tecnica Santa Maria, Chile

12:00 – 12:15 ***Breaking of chiral symmetry in vortex domain wall propagation in ferromagnetic nanotubes.*** J. Otalora, Univ. Tecnica Federico Santa Maria, Valparaiso, Chile

12:15 – 12:30 ***Exotic ground states formation driven by quantum critical fluctuations in intermetallic systems.*** J. Sereni. Centro atómico Bariloche, Argentina

12:30 – 14:30 Lunch

14:30 – 15:00 ***Domain wall dynamics in diluted ferromagnetic semiconductors.*** C. Gourdon. Institut des Nanosciences de Paris, France

15:00 – 15:30 ***Quantum hysteron: macroscopic quantum tunneling resolved by FORC method*** K. Pirota UNICAMP, Campinas, Brazil

15:30 – 15:45 ***Magnetic phases of fermionic atoms confined in 1D optical superlattice.*** J. Silva Valencia. Departamento de Física, Universidad Nacional de Colombia, Bogota, Colombia.

15:45 – 16:15 Coffee Break

16:15 – 16:45 ***Defect-induced magnetism in solids.*** P. Esquinazi. University of Leipzig, Germany

16:45 – 17:00 ***Micromagnetic simulations of the Joule-assisted magnetization switching with polarized currents*** A. Stancu. University of Iasi, Faculty of Physics and CARPATH, Romania.

17:00 – 17:15 ***From microwire to nanowire arrays: how to probe the individual magnetostatic properties.*** F. Beron, Instituto de Física G. Wataghin, Universidade Estadual de Campinas, Brazil.

17:15 – 19:00 POSTER SESSION C

- 10- Magnetic oxides
- 13 - Advanced experimental techniques for magnetic materials
- 14- Magnetic materials for applications
- 15- Sensors, MEMS and magnetic devices
- 16- Modeling for applications
- 17- Biomagnetism

SYMPOSIUM MAGNETIC OXIDES (Salon Azul)

11:00 – 11:30 ***Substrate influence in the barrier quality of multiferroic tunnel junctions, model and experiments.*** M. Sirena. Centro Atómico Bariloche, Argentina.

11:30 – 12:00 ***Emergence of magnetic phases by geometrically confined doping.*** U. Lüders CRISMAT, Caen, France

12:00 – 12:15 ***Enhanced magnetic properties in nanoparticulate powders of the $Mg_{0.6}Zn_{0.4}Fe_2O_4$ magnesium ferrite.*** F. Machado. Dto de Física, Universidade Federal de Pernambuco, Recife, Brazil .

12:15 – 12:30 ***On the dependence of the magnetic anisotropy in $Co_xFe_{3-x}O_4$ nanoparticles on particle size.*** T. Torres. Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza Spain.

12:30 – 14:30 Lunch

14:30 – 15:00 ***Structure and Magnetism of Soft Chemically Synthesized $BiFeO_3$ and $Bi_{12}MnO_{20}$.*** J. P. Sinnecker CBPF, Brazil.

15:00 – 15:30 ***Deconstructing magnetocaloric effect in manganites.*** M. Quintero. Centro Atómico Constituyentes, Argentina.

15:30 – 15:45 ***Evolution of the effective magnetic anisotropy in cubic spinels MnB_2O_4 (B=Cr, V)***. D. Tobia. Centro Atómico Bariloche, Argentina.

15:45 – 16:15 Coffee Break

16:15 – 16:40 ***Influence of interfaces on magnetic and electric properties in epitaxial films and heterostructures based on oxide materials*** . M. E. Gomez, Univ. del Valle, Colombia .

16:40 – 16:55 ***Magnetism of ultrathin - Fe_2O_3 on Pd(111) by XMCD***. G. F. M. Gomez . Dto. of Physics, UFMG, Belo Horizonte, Brazil

Friday – April 12th

09:30 – 10:30 ***Organic-Inorganic Hybrid Materials for Coexisting Electric and Magnetic Order.*** T. Palstra University of Groningen, The Netherlands.

10:30 – 11:00 Coffee Break

11:00 – 11:30 ***Effect of Magnetic Cluster Size on the Magnetocaloric Effect in a Magnetic Spin Glass.*** R. D. Shull National Institute of Standards and Technology, Gaithersburg, USA

11:30 – 12:00 ***Magnetic Refrigeration with Ni₂MnGa-based Heusler Alloys.*** A. Gomes .
Universidade Federal do Rio de Janeiro, Brazil

12:00 – 12:30 ***Stress induced magnetic domain structure in chemically disordered FePt thin films*** A. Butera. Centro Atómico Bariloche, Argentina.

12:30 – 13:00 ***Frustrated Magnetism and Spin Transitions via Lattice Magneto-Strain Measurements in Pulsed Magnetic Fields to 100 Tesla.*** M. Jaime. National High Magnetic Field Laboratory- Los Alamos, USA.

13:00 – Closing Remarks

SOCIAL PROGRAM

Welcome Reception: 18hs - 20hs at the Hall of Facultad de Derecho, Universidad de Buenos Aires. Ciudad de Buenos Aires.

Conference Dinner: 21hs at La Parolaccia Trattoria. Alicia M. De Justo 1052, Ciudad de Buenos Aires