José Solano Córdova

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ACADEMIC TRACK

POSDOCTORAL RESEARCHER
Institute of Physics of the Czech Academy of Sciences — **Sep 2024- Present**

Part of the Dioscuri Centre for spincaloritronics and magnonics. Development of antiferromagnetic and altermagnetic magnonic devices.

PhD PHYSICS
University of Strasbourg - IPCMS — **Oct 2019- Mar 2024**

Propagating spin wave spectroscopy and ferromagnetic resonance techniques were used to characterize the magnetic parameters and spin-polarized electron transport in Co_2MnSi and Fe epitaxial thin films. (Link).

MSc PHYSICS: CONDENSED MATTER AND NANOPHYSICS (MENTION TRÈS BIEN, 1/19)
University of Strasbourg - IPCMS — **Sep 2018- May 2019**

Instrumentation of a temperature dependent spin wave spectroscopy setup, and measurement of the spin-polarization of Permalloy ($Ni_{80}Fe_{20}$) thin film at 6 K (80%) (Link).

BSc PHYSICS (MAGNA CUM LAUDE, GPA= 3.83/4)
Universidad San Francisco de Quito — **Jul 2013- Dec 2017**

Broadband ferromagnetic resonance characterization of CoFeB, Permalloy, and Yttrium-Iron Garnet films (Link).

TEACHING & SUPERVISION EXPERIENCE

Institut de Phisique et Chimie de Materiaux de Strasbourg — **Research co-supervision**
Strasbourg, France — Oct 2019 – May 2024

- Mentored, instructed and supervised a postdoc researcher, 3 PhD and 3 master students in temperature dependent ferromagnetic resonance and propagating spin wave experiments.
- Instructed and supervised 2 PhD students in nanofabrication processes of magnonic devices, and mentored several PhD students in e-beam and laser lithographies.
- Motivated and supervised the expansion of the high frequency and spin waves laboratory.

Université de Strasbourg — **Teaching assistant**
Strasbourg, France — Sep 2019 – May 2020

- Teaching assistant of experimental physics course (Newtonian mechanics, electromagnetism, oscillations and waves, thermodynamics, etc.) for undergraduate physics students.

Universidad San Francisco de Quito — **Laboratory instructor and teaching assistant**
Quito, Ecuador — Sep 2016 – May 2017, Jan 2018 – May 2018

- Physics (introduction to electromagnetism) lab instructor for undergraduate engineering students.
- Teaching assistant of physics course (Newtonian mechanics) for undergraduate engineering students.

PUBLICATIONS

- **2026:** J. Solano, A. Friedel, Q. Rossi, et al. Spin polarization of the electric current in half-metallic Co_2MnSi Heusler thin films. Phys. Rev. B ... DOI: 10.1103/w93y-w66w
- **2025:** J. Solano, Q. Rossi, J. Robert, el al. Unraveling the temperature-dependent spin-polarized electron transport in iron via spin-wave Doppler shift. Phys. Rev. B 112, L140407. DOI: 10.1103/vh21-mhmv
- **2021:** J. Solano, O. Gladii, P. Kuntz, el al. Spin-wave study of magnetic perpendicular surface anisotropy in single crystalline MgO/Fe/MgO films. Phys. Rev. Materials 6, 124409. DOI: 10.1103/PhysRevMaterials.6.124409
- **2024:** M. J. V. Bernardez, **J. Solano**, M. Bailleul, et al. Multiresonance Microwave Absorption in Ti–Mn Substituted Barium Hexaferrite Composites, in IEEE Magnetics Letters, vol. 15, pp. 1-5, Art no. 5500305. DOI: 10.1109/LMAG.2024.3479936
- **2024:** M. Pacé, O. Kovalenko, **J. Solano**, M. Hehn, M. Bailleul, M. Vomir. Increasing TeraHertz spintronic emission with planar antennas. APL Mater. 12, 051113. DOI: 10.1063/5.0200413
- **2023:** L. Temdie, V. Castel, T. Reimann, M. Lindner, C. Dubs, G. Pradhan, **J. Solano**, et al. Chiral Excitation of Exchange Spin Waves Using Gold Nanowire Grating. Magnetochem., 9(8), 199. DOI: 10.3390/magnetochemistry9080199

CONFERENCE PROCEEDINGS

- **Spins, waves and interactions 2026:** Greisfwald, Germany. Invited talk: *Understanding GHz spin dynamics in altermagnets.*
- **Hybrid Angular Momentum Transport and Dynamics 2024:** Bad-Honeff, Germany. Contributed talk: *Unraveling electron spin-polarized transport in iron via spin wave Doppler shift.*
- **Colloque Luis Neel 2023:** Sète, France. Talk: *Determination of the degree of spin-polarization of the electron current in Co_2MnSi.*
- **Joint European Magnetic Symposia 2023:** Madrid, Spain. Poster: *Temperature dependent exchange interaction in Fe_xV_{1-x} thin films.*
- **ITI QMat scientific days 2023:** Strasbourg, France. Poster: *Spin-wave study of electron spin-polarized transport in ferromagnets.*
- **Magnonics 2022:** Los Angeles, USA. Poster: *Probing spin-polarized transport in Fe_xV_{1-x} with spin waves.*
- **Colloque Luis Neel 2022:** Obernai, France. Poster: *Probing spin-polarized transport in Fe_xV_{1-x} with spin waves.*

SCHOLARSHIPS AND AWARDS

Grants/Scholarships:

- **2026:** MSCA COFUND Physics for Future (P4F) for postdoctral research.
- **2025:** Short-Term Scientific Mission Grant (E-COST-GRANT-CA23136-d175aafc)
- **2019:** Doctoral funding granted after contest by Ecole Doctorale Physique et Chimie-Physique 182 (Université de Strasbourg).
- **2018:** Grant for master studies awarded by University of Strasbourg - Ecole Universitaire de Recherche QMAT.
- **2013:** Grant "Enrico Fermi" for Bsc. Physics studies (4.5 years full support) awarded after contest by Universidad San Francisco de Quito.

Conferences awards:

- **Jun. 2023:** Best poster at ITI QMat scientific days.
- **Aug. 2022:** Best poster at Magnonics 2022 conference.
- **Jul. 2022:** Best poster at Colloque Louis Neel 2022.