

PROGRAM

**Workshop on Modeling
and Simulation for Science
and Engineering**

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Chairman VII WMSSE

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Coordinator of the International Scientific Committee

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- Linda Gil de Fuentes
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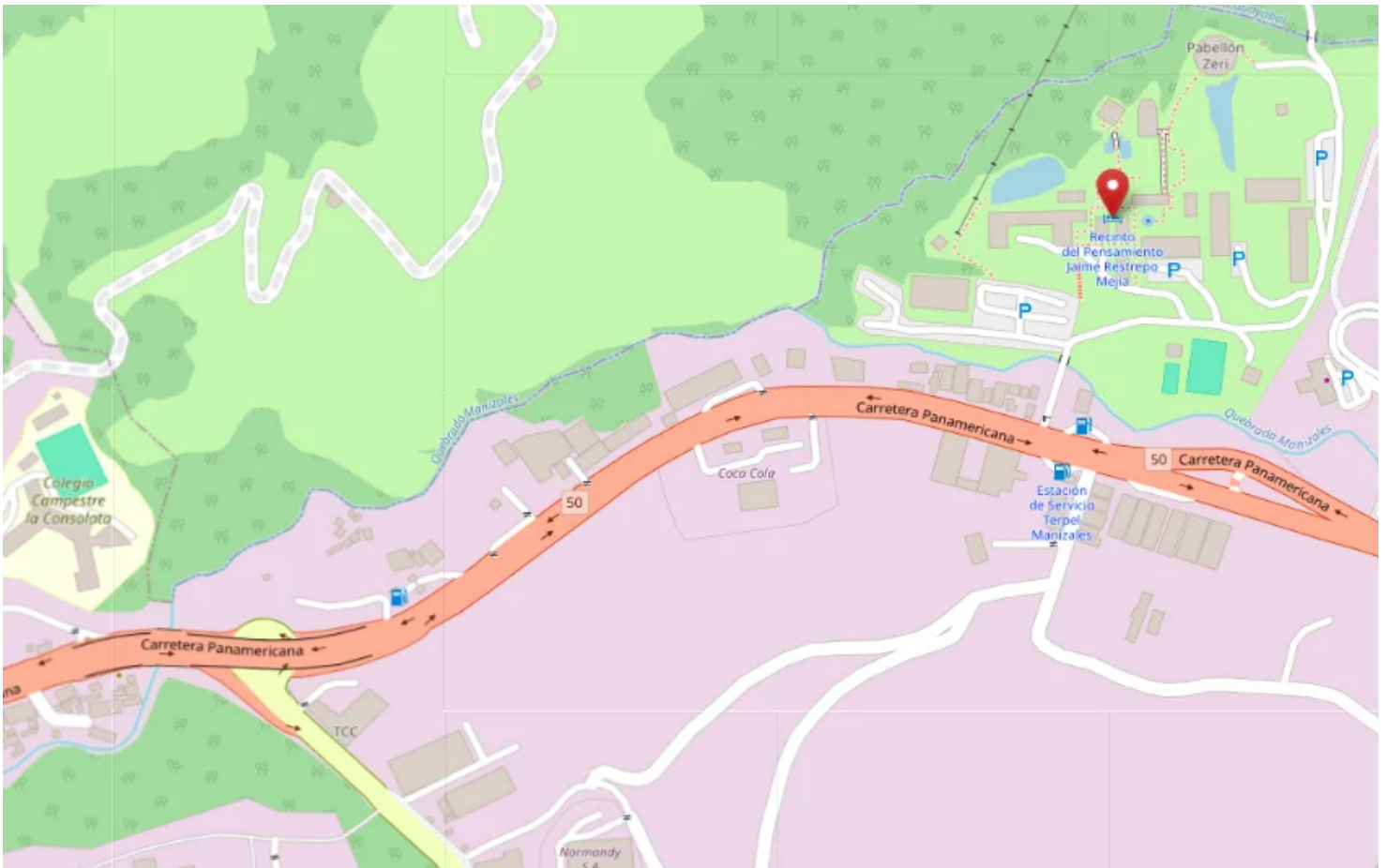
Invited Speakers

- ✓ Tiago Teixeira Saraiva
HSE Tikhonov Moscow Institute of Electronics and Mathematics, Russia
- ✓ Francisco de Paula Montero Chacón
Universidad Loyola Andalucía, Spain
- ✓ Ambjörn Wennberg
Nano4Energy, Spain
- ✓ Steven Tidrow
Alfred University, United States of America
- ✓ Linda Gil de Fuentes
Servicios LGLF SPA, Chile
- ✓ Mariana Pereyra Pérez
Universidad de la República, Uruguay
- ✓ Claudinei de Souza Guimaraes
Universidad Federal de Rio de Janeiro, Brazil

CONFERENCE VENUE

Estelar Recinto del Pensamiento Hotel & Convention Center

The VII Workshop on Modeling and Simulation for Science and Engineering (VII WMSSE) will be held from May 27 to 29, 2026, in the Estelar Recinto del Pensamiento Hotel & Convention Center is located in Manizales, Colombia; it offers a truly unique experience with comforts and services that exceed expectations. The Convention Center is fully equipped to host corporate, cultural, academic, scientific, and social events of all sizes, from small meetings and presentations to large conferences; it is home to the VII WMSSE, which engages education, science, engineering, and materials nanotechnology.



CONFERENCE ROOM

Wednesday, May 27, 2026	Barranquillo
	Barranquillo/Teams
Thursday, May 28, 2026	Barranquillo
	Barranquillo/Teams
Friday, May 29, 2026	Recinto del Pensamiento

The logo for VII WMSSE features a stylized white molecular structure with three spheres and connecting lines on the left. To its right, the text "VII WMSSE" is written in a large, bold, white, sans-serif font with a thick black outline. The background is a solid blue color with orange squares in the top right and bottom left corners.

VII WMSSE

TOPICS

- Computer Science (CS)
- Mechatronic Systems (MS)
- Dynamic Systems Modeling (DSM)
- Physical-Chemistry Modeling (PCM)
- Physics-Mathematical Modeling (PMM)
- Modeling, Simulation, and Diagnostics (MSD)
- Education on Science, Engineering, and Technology (ESET)
- Science, Engineering, Technology, and Innovation for Social Inclusion (SETISI)



PROGRAM

VII WMSSE

FIRST DAY

May 27, 2026

DAY HOUR	WEDNESDAY MORNING
8:00 – 8:30	Registration
8:30 – 9:00	Opening Ceremony: VII Workshop on Modeling and Simulation for Science and Engineering (VII WMSSE) Conference Room: Barranquillo
9:00 – 9:30	Plenary Lecture I: Goldschmidt's tolerance factor centennial celebration and recent demise Keynote Speaker: Steven C Tidrow Conference Room: Barranquillo
9:30 – 10:00	Plenary Lecture II: Functional coatings via HIPIMS for the hydrogen economy Keynote Speaker: Ambjørn Wennberg Conference Room: Barranquillo/Teams
10:00 – 10:30	Coffee Break
10:30 – 11:00	Plenary Lecture III: Exotic phase transition and intertype superconductivity in ferromagnetic superconductors Keynote Speaker: Tiago Teixeira Saraiva Conference Room: Barranquillo/Teams
11:00 – 11:30	Plenary Lecture IV: A multiphysics digital twin for battery components: bridging manufacturing and operation via the lattice-particle method Keynote Speaker: Francisco Montero Chacón Conference Room: Barranquillo/Teams
11:30 – 12:00	Plenary Lecture V: Artificial intelligence applied to the development of biogas digesters and biogas production Keynote Speaker: Claudinei de Souza Guimarães Conference Room: Barranquillo/Teams
12:00 – 12:20	Oral Presentation ID 52: Iterative model for automated design of S- and C-band ring-type microstrip antennas based on cavity models and artificial neural networks Speaker: Iván Aníbal Zuluaga Bernal Conference Room: Barranquillo/Teams
12:20 – 14:00	Lunch Break

DAY HOUR	WEDNESDAY AFTERNOON
14:00 – 14:20	Keynote I: Collaborative research in materials science, engineering, and nanotechnology: the CECOB–FORISTOM–UDELAR partnership Keynote Speaker: Linda Gil de Fuentes Conference Room: Barranquillo/Teams
14:20 – 14:40	Oral Presentation ID 51: Modeling the drop jump: test quality beyond the reaction index Speaker: Jorge Clavijo Conference Room: Barranquillo/Teams
14:40 – 15:00	Oral Presentation ID 44: Efficient multiscale finite element modeling via tensor-based embedding of unresolved mesoscale physics Speaker: German Orlando Romero Suarez Conference Room: Barranquillo/Teams
15:00 – 15:20	Oral Presentation ID 34: Influence of offset on the torsional moment of the polyethylene liner: finite element analysis of the redistribution of tangential forces in different prosthesis combinations Speaker: Juan Diego Sierra Villegas Conference Room: Barranquillo
15:20 – 15:40	Oral Presentation ID 29: Wave guide propagation in plates with discontinuities using the scaled boundary finite element method Speaker: Felipe Andres Cediél Carreño Conference Room: Barranquillo
15:40 – 16:00	Keynote II: FTIR Authentication of natural wigs: a step towards quality and social inclusion for oncological patients Keynote Speaker: Eduardo Mendez Conference Room: Barranquillo
16:00 – 16:20	Coffee Break
16:20 – 16:40	Keynote III: Critical currents in superconducting systems Keynote Speaker: José José Barba Ortega Conference Room: Barranquillo
16:40 – 17:00	Oral Presentation ID 15: Modelling of the energy and environmental impact of a parallel-compression refrigeration Booster system Using CO ₂ /R290 and CO ₂ /R1270 Speaker: Johnatan Cubides Rondon Conference Room: Barranquillo
17:00 – 17:20	Oral Presentation ID 18: Automation of an IoT-based irrigation system for Carica papaya crops Speaker: Hernán David Sánchez Restrepo Conference Room: Barranquillo
17:20 – 17:40	Oral Presentation ID 19: Optimization of aerodynamic profiles of the Savonius turbine for the implementation of a hybrid wind turbine Speaker: José Antonio Parada Marín Conference Room: Barranquillo

17:40 – 18:00	Oral Presentation ID 21: From corn residues to adsorbent biochar: integrated valorization through <i>Pleurotus ostreatus</i> cultivation and thermochemical conversion Speaker: Elkin Andres Silva Calderon Conference Room: Barranquillo
18:00 – 18:20	Oral Presentation ID 23: Biomarkers for detecting damage to vertebrae affected by prostate cancer metastasis using finite elements Speaker: Annie Sofia Alvarado Fuentes Conference Room: Barranquillo

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