



**XX Mexican School on Particles and Fields  
Division of Particles and Fields  
Mexican Physical Society  
Second Bulletin**

Dear participants of the Mexican School of Particles and Fields,

We hope you are excited about the next edition of the Mexican School of Particles and Fields, which will take place in the City of Mérida, Yucatán. We want to provide you with some important notices to ensure your stay is as pleasant and productive as possible.

• **Registration and inauguration:**

Registration will begin on Monday at 7:30 AM and is expected to begin at 8:30 AM with the opening ceremony at the UADY Faculty of Engineering.

<https://maps.app.goo.gl/u57P2FomjDCCwMzm6>

• **Schedule**

The agenda can be consulted at the following link:

<https://indico.nucleares.unam.mx/event/2075/timetable/#20231030>

General program:

XX Mexican School on Particles and Fields										
	Lunes		Martes		Miercoles		Jueves (Cinvestav)		Viernes	
7:30-8:30	Registro		8:00-8:10	Quizz			8:00-8:10	Quizz	8:00-8:10	Quizz
8:30-9:00	Bienvenida		8:10-9:00	Plenary 5			8:10-9:00	Plenary 8	8:10-9:00	Plenary 12
9:00-9:50	Lecture 1		9:00-9:50	Lecture 1			9:00-9:50	Lecture 1	9:00-9:50	Lecture 1
9:50-10:40	Lecture 2		9:50-10:40	Lecture 2			9:50-10:40	Lecture 2	9:50-10:40	Lecture 2
10:40-11:10	Café		10:40-11:10	Café			10:40-11:10	Café	10:40-11:10	Café
11:10-12:00	Lecture 3		11:10-12:00	Lecture 3			11:10-12:00	Lecture 3	11:10-12:00	Lecture 3
12:00-12:50	Plenary 1		12:00-12:50	Plenary 6			12:00-12:50	Plenary 9	12:00-12:50	Plenary 13
12:50-14:20	Comida		12:50-14:20	Comida			12:50-15:00	Comida	12:50-14:20	Comida
14:20-15:10	Lecture 4		14:20-15:10	Lecture 4			15:00-15:50	Lecture 4	14:20-15:10	Lecture 4
15:10-16:00	Plenary 2		15:10-16:10	Short Talk			15:50-16:40	Plenary 10	15:10-16:10	Plenary 14
16:00-16:30	Café		16:10-16:40	Café			16:40-17:10	Café	16:10-16:40	Café
16:30-17:20	Plenary 3		16:40-17:30	Plenary 7		18:00-19:00	17:10-18:00	Plenary 11	16:40-17:40	Short Talk
17:20-18:10	Plenary 4		17:30-18:30	Short Talk		19:00-21:00	18:00-18:30	Medalla	17:40-18:30	Plenary 15

Courses:

Lecture 1	Carlos Vaquera	The Standard model and beyond
Lecture 2	Isabel Dominguez	Machine learning in High-Energy Physics
Lecture 3	Juan Carlos Arteaga	Astroparticles and cosmic rays
Lecture 4	Cristhian Valerio	Particle accelerator physics
	Israel Maury	Particle accelerator physics

Plenaries:

Plenary talk 1	Patrick Achenbach	Study of Nucleon Resonance Electroexcitations at Jefferson Lab
Plenary talk 2	Lorenzo Díaz	The hierarchy problem and physics beyond the SM
Plenary talk 3	Hermes León	Experimental astroparticle physics from the top of a Mexican volcano
Plenary talk 4	Ivonne Maldonado	The MPD Detector, a facility to explore the QCD phase diagram: status and physics capabilities.
Plenary talk 5	Alejandro Castilla	Introduction to accelerators and their applications
Plenary talk 6	Jhovanny Mejia	Física del Sabor en el LHC y el Experimento CMS: Explorando las Familias de Quarks
Plenary talk 7	Luis Flores	Higgs boson measurements and BSM searches with the ATLAS detector
Plenary talk 8	Adnan Bashir	Hadron Structure Through the Lense of Continuum QCD
Plenary talk 9	Pablo Roig	Muon $g-2$ : How many sigmas?
Plenary talk 10	Alejandro Ayala	Hunting for phases: Exploring the QCD phase diagram with heavy-ion collisions
Plenary talk 11	Eduard de la Cruz	Navigating through the Intensity Frontier: Unveiling Mysteries at Belle II
Plenary talk 12	Mauro Napsuciale	Tensor dark matter
Plenary talk 13	Selomit Ramirez	Quantum algorithms applied to Feynman loop integrals
Plenary talk 14	Jorge Martínez	Perspectivas laborales después de un posgrado en Física de Altas Energías

Short talks:

Martes 15:10-16:10 hrs:

Sala 1

Limits on $ V_{td} $ from single-top production at $\sqrt{s}$ colliders	Mr. PAREDES CRUZ, Edier
Is the $\Omega(2012)$ a molecular state?	Dr. TOLEDO, Genaro
Top quark flavor changing couplings at a muon collider.	Mr. AKE, Daniel
SIZING THE DOUBLE POLE RESONANT ENHANCEMENT IN $e^+e^- \rightarrow \pi^0 \pi^0 \gamma$ CROSS SECTION AND $\tau^- \rightarrow \pi^- \pi^0 \nu_\tau \gamma$ DECAY	Mr. ROJAS RAMOS, Antonio; Dr. TOLEDO, Genaro

Sala 2

LHC constraints on long-lived particles in the dark S3 model.	Dr. BARRADAS GUEVARA, José Enrique; Dr. ESPINOZA-HERNANDEZ, Maria Catalina; Dr. MONDRAGON
Renormalization of the U(1) gauge theory for tensor dark matter in arbitrary gauge: preliminary results.	Mr. RANGEL PANTOJA, Armando De La Cruz; Prof. NAPSUCIALE, Mauro
Pion screening mass in a magnetized medium	RENDON, Jesus
Comparison of particle ratios for two event generators at NICA energies	Mr. GUZMÁN CASTRO, Rodrigo

Martes 17:30-18:30 hrs

Sala 1

New modular flavor phenomenology arising from 2D3 symmetries	Mr. ARRIAGA-OSANTE, Carlos; Dr. LIU, Xiang-gan; Dr. RAMOS-SANCHEZ, Saul
Lepton Flavor Violation from diphoton effective operators	Dr. MARÍN, Marcela
$\tau^- \rightarrow \pi^- \eta \nu_\tau$ decay induced by QED one-loop effects	Mr. PORTILLO, Diego
Boosting di-Higgs searches at the LHC with ParticleNet algorithm	Dr. CASTAÑEDA, Alfredo

Sala 2

Perspectives for the Coherent Elastic Neutrino-Nucleus Scattering study by isotopic detectors	DUQUE HERRERA, Laura; Dr. MIRANDA ROMAGNOLI, Omar
Neutrino Mass and Mixing Models	Mr. TOLEDO MENDEZ, Isangel; Dr. PEREZ-LORENZANA, Abdel
Two-loop neutrino masses in a broken B-L symmetry	Mr. MARTINEZ RAMIREZ, Rolando; PEINADO, Eduardo; Mr. GARCIA DE LA VEGA, Leon Manuel
A photohadronic interpretation of the H.E.S.S. afterglow observations from GRB 221009A	Dr. SAHU, Sarira; Mr. MEDINA CARRILLO, Benjamin

Viernes 16:40-17:40

Sala 1

The H*ZZ vertex	Mr. HERNÁNDEZ JUÁREZ, Alan Ignacio
Soluciones de energía negativa y taquiónicas en ecuaciones de Weinberg-Tucker-Hammer para espín 1	Prof. DVOEGLAZOV, Valeriy
Towards two-loop master integrals for ttH	Mr. KRAUS, Manfred
Symmetries and Interactions of N=1 Supergravity from the Constructive approach	Mr. JONATHAN, Reyes Pérez; Dr. J. LORENZO, Díaz Cruz

Sala 2

Extraction of mesons form factors in a symmetry preserving model	Dr. HERNÁNDEZ-PINTO, Roger José
Understanding QCD through the Baryon structure	Mr. PAREDES, Gustavo

- **Food during the Event:**

During the event, meals will be offered for those interested. At the beginning of the day, the list will be passed for food selection and it will close at 9 AM. The cost of the meal is (Mexican pesos) \$75 (half) and \$90 (full). They are asked to bring the exact amount. On Wednesday and Thursday, this service will not be available.

- **Visit to Chichen Itza:**

As part of your visit to Yucatán, we have organized a visit to the archaeological site of Chichén Itzá. The excursion will take place on Wednesday, November 1. Be sure to wear comfortable clothing and shoes, sunscreen, and water. It is important to carry a student or teacher ID as passes are complimentary for students or teachers.

- **Important places**

1. Airport: <https://maps.app.goo.gl/Px8UMDzHkmsYRkmM8>
2. Historic center: <https://maps.app.goo.gl/WugeNXA1cFiRnXQa7>
3. Cinvestav: <https://maps.app.goo.gl/m8kpHBZrb76LxP4J6>
4. Ibis Hotel: <https://maps.app.goo.gl/a6fPS5tQdzu8fdq97>
5. Faculty of Engineering at UADY: <https://maps.app.goo.gl/uGtUzXqYSDrmBw6T7>

- **Arriving in Mérida through the Airport**

To get from the airport to some point in the city of Mérida, there are 3 alternatives

1. Airport taxis

2. The Didi and Uber platforms can only pick up users on Avenida Internacional or Avenida Benito Juárez (walk 800m)
3. The Va y Ven public transportation service, which will take you to the historic center and the Montejo promenade (Stop at the Fiesta Americana Hotel). The fare is \$45 pesos and can be paid directly to the bus operator. <https://vayven.yucatan.gob.mx/rutaaeropuerto>. While at the Hotel Fiesta Americana you can request Didi or Uber for your transfer to the Ibis Hotel.

- **Mobility in Mérida:**

In the following link there is a brochure explaining the mobility options in Mérida:

[https://drive.google.com/file/d/1OxuV8SWDPx-EMUfzdDOMpfM8XpLvITV2/view?usp=drive\\_link](https://drive.google.com/file/d/1OxuV8SWDPx-EMUfzdDOMpfM8XpLvITV2/view?usp=drive_link)

Please do not hesitate to contact us if you have any additional questions.

We look forward to welcoming you to Mérida.

See you tomorrow!