



## XII MEXICAN SCHOOL OF THE DIVISION OF GRAVITATION AND MATHEMATICAL PHYSICS OF THE MEXICAN PHYSICAL SOCIETY

[http://www.ifug.ugto.mx/~msabido/XII\\_Escuela/index.html](http://www.ifug.ugto.mx/~msabido/XII_Escuela/index.html)

## 3rd SCHOOL OF GENERAL RELATIVITY AND GRAVITATIONAL WAVES OF THE BLACK HOLE AND GRAVITATIONAL WAVES THEMATIC NETWORK

<http://ergog2016.wixsite.com/ergog2018>

### *"Black Holes and Gravitational Waves"*

Playa de Carmen, México, November 5-9

The Gravitation and Mathematical Physics Division (DGFM) of the Mexican Physical Society (SMF) and the Black Holes and Gravitational Waves Thematic Network (RED ANYOG) are glad to announce the celebration of its XII Mexican School and 3rd Thematic Network School. As in previous events, our main goal is to provide an inviting arena for the exchanging and discussion of ideas on top developments in gravitational physics in a pedagogical manner. Apart from researchers, an important number of postdocs and graduate students take part in our School, which in this occasion will be focused on several aspects of Black Holes and Gravitational Waves with an emphasis of confronting theory with observations. The scientific program will include four courses, six plenary talks and two sessions of parallel talks.

At the conclusion of the School, the workshop of Black Holes and Gravitational Wave Thematic network will be held.

The venue will be the Hotel Iberostar Playa Paraiso (<http://www.iberostar.com/>) located in Playa del Carmen, Riviera Maya, Quintana Roo, México (Lobby Beach, Carretera Chetumal-Puerto Juárez Km. 309), an inspiring place offering cultural features and natural beauty at the Caribbean coast, in a region where a number of Maya cities once flourished.

## LECTURE COURSES

- Luis Lehner (Perimeter Institute, Canada): *Numeric Relativity*.
- Mauricio Antelis (Instituto Tecnológico de Estudios Superiores de Monterrey en Guadalajara, México): *Data Analysis in Gravitational Waves*.
- Luc Blanchet (Institut d'Astrophysique de Paris, France): *Post Newtonian Analysis*.
- Aaron Zimmerman (Canadian Institute for Theoretical Astrophysics, Canada): *Quasinormal Modes*.

## PLENARY TALKS

- **What are the galactic and extragalactic sources of the highest energy gamma rays?:** Andrés Sandoval (IF-UNAM, México).
- **Seed Black Holes:** Simona Gallerani (Scuola Normal Superiore di Pisa-Italy).
- **Cosmology from gravitational waves standard sirens:** Daniel Holz (Stanford University-USA).
- **Effective field theory in Gravity:** Rafael Porto (DESY, Hamburg).
- **Detector Network:** Brian O'Reilly (LIGO, USA).
- **Gravitational Waves in inflation from a spinor fields:** Mauricio Bellini (Univ. Nac. Rio de la Plata, Argentina).
- \* **TBA:** Pierre Henri Chavanis (Université Paul Sabatier, France).
- \*\* **On necessary and sufficient conditions for strong hyperbolicity:** Oscar Reula (Univ. Nac. de Córdoba, Argentina).
- \*\* **Exact ghost-free bigravitational waves:** Eloy-Ayon-Beato (CINVESTAV-México).
- \*\* **Generalizations of boson stars and the scalar field dark matter modes:** Argelia Bernal (Univ. de Guanajuato, México).

\* **Talk in conjunction with MX-DARK MATTER**

\*\* **Talk in conjunction with RED ANYOG**

## REGISTRATION

To register send an e-mail to Miguel Sabido ([dgfm.smf@gmail.com](mailto:dgfm.smf@gmail.com)) including full name, contact details, institution, title + abstract of your proposed talk. An effort will be made to reasonably accommodate as many parallel talks as possible.

Deadline for title + abstract submission: September 25. We will respond quickly to all talk requests so that interested participants can benefit from the early payment of the registration fee (see below).

## STUDENTS

**REGISTRATION FEE:** (MX\$2,500.00 Mexican Pesos)

**EARLY:** Before September 30: MX\$2,500.00 (USD\$125.00)

**REGULAR:** Between September 30 and October 28: MX\$3,000.00 (USD\$150.00)

The price is in Mexican pesos; the price in USD will fluctuate with the MXN.USD exchange rate.

## FACULTY AND POSTDOCS

REGISTRATION FEE (**For current SMF member the fee is the same as students**)

**EARLY:** Before September 30: MX\$ 3,500.00 (USD\$175.00)

**REGULAR:** Between September 30 and October 28 MX\$ 4,000.00 (USD\$ 200.00)

## REGISTRATION FEE PAYMENT AND RECEIPTS

In order to get your receipts for the registration fee please send a copy of the deposit slip to Román Linares ([lirr@xanum.uam.mx](mailto:lirr@xanum.uam.mx)) and, for domestic participants, full RFC information.

### Domestic participants:

Bank: Banco Nacional de México (Banamex)

Account number (Mexican pesos): 1866151 Sucursal 349

CLABE: 002180034918661519

Beneficiary: Sociedad Mexicana de Física A.C.

Reference: EDGFM18

The deposit amount must correspond to the fee that applies according to the schedule above. The receipt will be produced in Mexican pesos.

### International participants:

**Bank:** Banco Nacional de México (Banamex) Account number (US dollars): 9345347 Sucursal 349.

**Bank code:** 002180034993453470 Beneficiary: Sociedad Mexicana de Física A.C.

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### ACCOMMODATION (November 4-9):

MX\$2,351.00 per night Single Occupancy, (MX\$11,755.00 for 5 night stay).

MX\$1,673.00 per night in Double Occupancy, (MX\$8,365.00 for 5 night stay).

MX\$1,589.00 per night in Triple Occupancy, (MX\$7,945.00 for 5 night stay).

The hotel is an "all-inclusive" resort, so room prices include accommodation plus 3 buffet-style meals, domestic drinks and snacks (the above rates do not include transportation to and from the airport).

The hotel charges a daily entrance fee for people not hosting in Iberostar due to the all inclusive hotel system.

### **NOTICE:**

That rooms were reserved until **October 5**, those who want to register after this date, or the pre-booked rooms have been occupied, you must contact the hotel directly to check for availability.

### **HOTEL PAYMENT AND RESERVATIONS**

Hotel Reservations will be done directly to the Hotel call center, phone number: 01 984 877 2800.

### **PAYMENT DEPOSIT AT:**

After doing the reservation at the call center ask for the payment information.

### **TRANSPORTATION**

The best way to get to Iberostar Playa Paraiso, is by airplane to the Cancun International Airport <http://www.cancun-airport.com/>. From there you can take a shuttle or a taxi to go directly to Hotel Iberostar Paraiso Beach (Lobby Beach, Carretera Chetumal-Puerto Juárez Km. 309). The Hotel is 30 min away from Xcaret, about an hour from Tulum or Xel-Há, among others. Riviera Maya has a lot of touristic places like Maya ruins, beaches, adventure centers, etc., for more information, you can visit:

<https://www.visitmexico.com/en/main-destinations/quintana-roo/cancun>

### **ORGANIZING COMMITTEE**

Román Linares (UAM-Iztapalapa)

Claudia Moreno (UdG)

Dario Núñez (UNAM)

Miguel Sabido (UdeGto)

Olivier Sarbach (UMSNH)