



**ICTP** | International Centre for Theoretical Physics  
**SAIFR** | South American Institute for Fundamental Research

**Campus of IFT-UNESP – São Paulo, Brazil**

Image credit: S. Definis



**SYDNEY BARNES**  
U. of Potsdam, Germany



**WLADIMIR LYRA**  
New Mexico State U., USA



**FILIPPO SANTOLIQUIDO**  
GSSI, L'Aquila, Italy



**CRISTINA CHIAPPINI**  
Leibniz Institute for Astrophysics Potsdam, Germany



**CAMILLA DANIELSKI**  
INAF Arcetri, Italy



**ROMEEL DAVÉ**  
U. of Edinburgh, UK

**July 29 – August 9, 2024**

**COSMOLOGICAL HISTORY:  
FROM GRAVITATIONAL  
WAVES TO EXOPLANETS**

Recent advancements in gravitational physics and astrophysics have gathered significant attention, underscored by the Nobel Prizes awarded in 2017 (Weiss, Barish, Thorne), 2019 (Peebles, Mayor, Queloz), and 2020 (Penrose, Genzel, Ghez). Concurrently, we have embarked on an era characterized by astrophysical and cosmological surveys of unparalleled precision, resolution, and cadence. These surveys enable intertwined investigations in galactic, extragalactic astrophysics, and cosmology fields that, although deeply interconnected, have historically been explored through separate avenues with only occasional intersections.

Gravitational wave detections are starting to give invaluable information about stellar mass function and birth rates, which in turn provides insights into galaxy and protogalaxy formation and the boundary conditions for matter that forms exoplanets. Such knowledge also provides a crucial piece of the puzzle in understanding galactic structure formation which has important cosmological consequences.

This school is dedicated to bridging astrophysics and cosmology across different scales by offering fresh perspectives for interpreting recent observations of gravitational waves, black holes, and exoplanets.

There is no registration fee and limited funds are available for travel and local expenses.

**Application deadline: May 4, 2024**

**Online application and more information:  
[www.ictp-saifr.org/chgwe2024](http://www.ictp-saifr.org/chgwe2024)**



**ORGANIZERS**

**Raul Abramo**  
USP, São Paulo

**José Dias do Nascimento Júnior**  
Dep. Física UFRN, Natal

**Riccardo Sturani**  
IFT-UNESP, São Paulo

**ICTP-SAIFR STEERING COMMITTEE**

Atish Dabholkar (chair, ICTP director)  
 Pasqual Barretti (UNESP rector)  
 Márcio de Castro Silva Filho (FAPESP scientific director)  
 Hugo Aguilaniu (SerraPilheira president-director)  
 Helena Nader (Brazilian Academy of Sciences president)  
 Juan Maldacena (South American representative)

**ICTP-SAIFR SCIENTIFIC COUNCIL**

Carlos Brito Cruz (chair, Elsevier)  
 Rosario Fazio (ICTP)  
 Ricardo Matheus (IFT-UNESP)  
 William Bialek (Princeton Univ.)  
 Eduardo Fradkin (Univ. of Illinois)  
 Gabriela González (Louisiana State Univ.)  
 André de Gouvêa (Northwestern Univ.)  
 Michael Green (Cambridge Univ.)  
 Karen Hallberg (Balseiro Inst.)  
 Luis Lehner (Perimeter Inst.)

**ICTP-SAIFR STAFF**

Nathan Berkovits (Director)  
 Rogerio Rosenfeld (Vice-Director)  
 Pedro Vieira (Perimeter-SAIFR Coordinator)  
 Elisa Pomari (Activities Coordinator)  
 Humberto Neto (Executive Secretary)  
 Luiz Eduardo Moreira (Computer Systems Manager)  
 Maycon Clemente Silva (Administrative Secretary)  
 Lilia Faria (Financial Manager)  
 Marrey Peres, Jr. (Operations Manager)  
 Thiago Codinhoto (Technical Assistant)  
 Felipe Saldanha (Communications Coordinator)