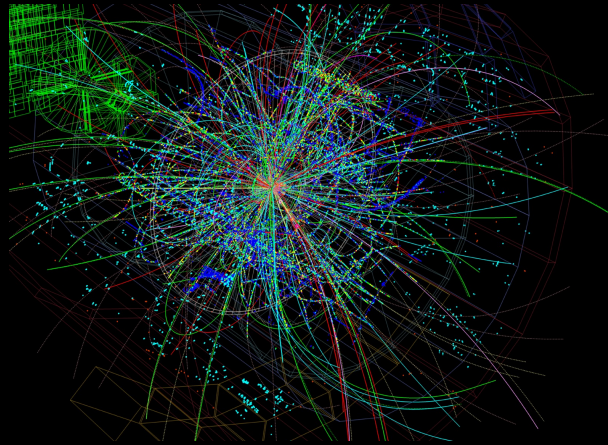
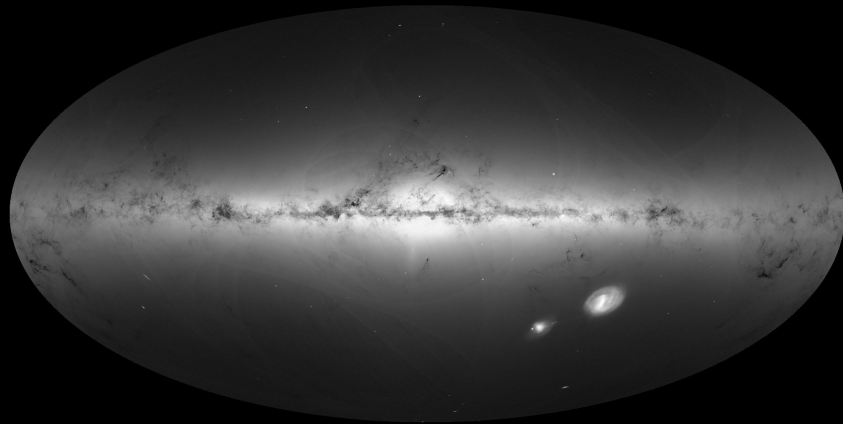


Sessió informativa
del
Màster en Astrofísica, Física de Partícules i Cosmologia

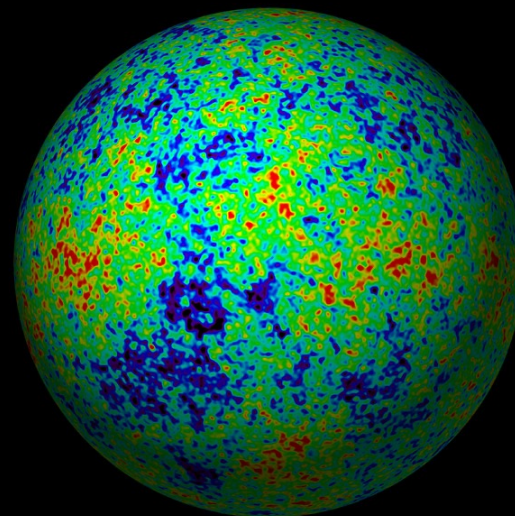
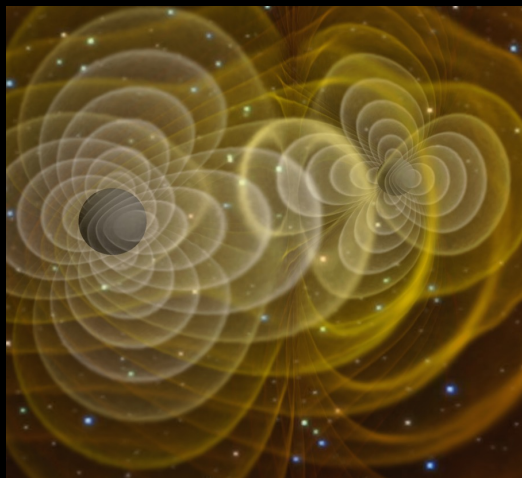


Presenta:

Josep Maria Solanes,
coordinador del master

Dilluns, 4 d'abril de 2022
Sala de graus Eduard Fontseré

Màster amb beques de



THE ICCUB IS AT THE HEART OF THE MAPFiC

Created in 2006 as the instrument of the University of Barcelona for the active support of research in theoretical and observational astrophysics and particle physics, paying special attention to their synergy with cosmology, and also to promote experimental physics and instrument development.

Chosen in 2015 as 'María de Maeztu Center of Excellence' by the Spanish Government for the international impact of its scientific contributions, its innovative power and its strong relationship with the social and economic environment. **4-year award renewed in 2020!**



EXCELENCIA
MARÍA
DE MAEZTU

Seal of excellence from AQU Catalunya

This seal certifies that our program has completed the process of accreditation successfully with the overall qualification of "accreditation with excellence", since it has complied to a high level with the majority of established criteria and with numerous good practices that exceed the required minimum.

Valid until: January 21, 2025



AQU Catalunya està inscrita a EQAR

Some statistics about the master's degree

- Between 40-50 pre-admission requests.
- About 25 *new* students (65% PG/35% AE) per year.
- About 80% of the students complete the degree in one academic year; average length of studies: 1.1-1.2 yr/student.
- Previous studies: Physics, Mathematics, Engineering (diversity of fields), Economics...
- Career opportunities: mostly doctoral studies. Yet, we also offer specialised training for people who wishes to work in a company, teaching, etc o that simply desires to extend one's knowledge.

Structure of the degree

Two branches of study:

- **Astrophysics and Space Sciences** (studies the macrocosmos, i.e., the various astronomical objects and their associated physics).
- **Particle Physics and Gravitation** (studies the microcosmos, i.e., the structure of matter and their fundamental interactions).

It is possible to design an interdisciplinary curriculum by selecting subjects of both specialties. Best if done with the master thesis (TFM).

Calendar and timetable

- The standard master **program** is **divided in two** terms or **semesters** that run from September to January (Fall term) and from February to June (Spring term). **Enrollment takes place in July-September only.**
- **In-class subjects taught from Monday to Thursday in 60-min sessions.**
- **Full-time dedication is 60 ECTS arranged on two semesters**
 - Fall term: 4 in-class subjects (24 ECTS);
 - Spring term: 2 in-class subjects (12 ECTS) + TFM (24 ECTS).
- **Part-time dedication is a minimum of 18 ECTS/year.**

Distribution of ECTS

The 60 master's credits must be obtained from:

- 12 ECTS in two six-monthly mandatory common subjects ('Advanced Cosmology' and 'Mathematical and Statistical Techniques').
- 12 ECTS in six-monthly mandatory specialty subjects.
- 12 ECTS in six-monthly elective subjects.
- 24 ECTS in the mandatory Final Master Project (TFM), an introductory research project one semester long. **Offered in Fall and Spring.**

All regular master's subjects are taught in English

(formative complements are given in Catalan and/or Spanish).

List of study areas and subjects

1. Cosmologia	Obligatòria (6 ECTS)
Cosmologia avançada	6 ECTS
2. Tècniques matemàtiques i estadístiques	Obligatòria (6 ECTS)
Tècniques matemàtiques i estadístiques	6 ECTS
3. Astrofísica estel·lar i galàctica	Optativa (12 ECTS) Obligatòria per la especialitat d'astrofísica i ciències de l'espai
Estructura i formació estel·lar	6 ECTS
Astronomia galàctica	6 ECTS
4. Física d'altres energies	Optativa (12 ECTS) Obligatòria per la especialitat de física de partícules i gravitació
Teoria quàntica de camps	6 ECTS
Partícules elementals	6 ECTS
5. Tècniques d'observació i experimentació	Optativa (12 ECTS)
Tècniques experimentals en la física de partícules i l'astrofísica	6 ECTS
Tutoria I (suspesa temporalment)	3 ECTS
Tutoria II (suspesa temporalment)	3 ECTS
6. Astrofísica avançada	Optativa (12 ECTS)
Astrofísica extragalàctica i formació de galàxies	6 ECTS
Astrofísica d'altres energies	3 ECTS
Astronomia des de l'espai	3 ECTS
7. Física de partícules i gravitació avançades	Optativa (18 ECTS)
Relativitat general avançada	6 ECTS
Teories gauge del model estàndard	6 ECTS
Fronteres de la física teòrica	6 ECTS
8. Treball de final de màster	Obligatòria (24 ECTS)
Treball de final de màster	24 ECTS

Fees and tuition grants

- The enrolment fees for official master's degrees are established by the Generalitat de Catalunya. **Since 2021-2022 the fees per ECTS at the public Catalan universities are 27.67 Eur** for national students from EU member states, as well as for students holding residence permits in Spain lasting not less than one year. For all other students the fees per ECTS are 82 Eur. **There is also a pre-enrolment fee of 30.21 Eur.**
- **Grants from the Institute of Cosmos Sciences (ICCUB):** The Institute of Cosmos Sciences (ICCUB) offers several tuition grants to pursue the master program. **Next academic year we will offer 4 full-tuition and 5 half-tuition scholarships.**
- **Other grant sources: Beques Master+ UB,** University of Barcelona's internships, Spanish government, Catalan government, Catalunya-La Pedrera, La Caixa,... ask the Student's Office.

Do not forget to check the ICCUB's website

https://icc.ub.edu/master_afpc/

for master thesis proposals, subjects' schedules, TFM deadlines, grant information, contact details of staff and lectures, etc.