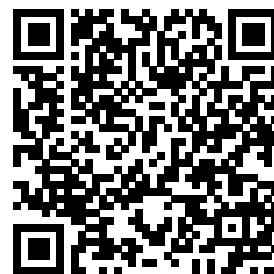


The dark universe

**MASTER'S DEGREE IN PARTICLE PHYSICS AND PHYSICS OF
THE COSMOS**

UNIVERSIDAD INTERNACIONAL MENÉNDEZ PELAYO

This document can be used as reference documentation of this subject for the application for recognition of credits in other study programmes. For its full effect, it should be stamped by UIMP Student's Office.



GENERAL DATA

Name

The dark universe

Code

102453

Academic year

2022-23

Degree

[MASTER'S DEGREE IN PARTICLE PHYSICS AND PHYSICS OF THE COSMOS](#)

ECTS Credits

6

Type

ELECTIVE

Duration

Cuatrimestral

Language

FACULTY

Coordinator/s

Kavanagh , Bradley James

*Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)*

Lecturers

Diego Rodríguez, José María

*Investigador Científico CSIC
Instituto de Física de Cantabria*

García Irastorza, Igor

*Profesor titular de universidad en física atómica, molecular y nuclear
Universidad de Zaragoza*

Vilar Cortabitarte, Rocío

*Profesora Contratada Doctora
Universidad de Cantabria (UC)*

SCHEDULE

Timetable

31/01/2023

16:30 - 18:30

Intro: Dark Matter, Dark Energy (and Natural Units)

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

01/02/2023

16:30 - 18:30

Evidence for Dark Matter (Cosmology and BBN)

José María Diego Rodríguez

Investigador Científico CSIC
Instituto de Física de Cantabria

02/02/2023

16:30 - 18:30

Evidence for Dark Matter (Galaxies and Astrophysics)

José María Diego Rodríguez

Investigador Científico CSIC
Instituto de Física de Cantabria

07/02/2023

16:30 - 18:30

Examples & Discussion: Evidence for Dark Matter

José María Diego Rodríguez

Investigador Científico CSIC
Instituto de Física de Cantabria

08/02/2023

16:30 - 18:30

DM Candidates: Weakly Interacting Massive Particles

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

09/02/2023

16:30 - 18:30

WIMP Production and Indirect Detection

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

14/02/2023

16:30 - 18:30

WIMP Direct Detection

Rocío Vilar Cortabitarte

Profesora Contratada Doctora
Universidad de Cantabria (UC)

15/02/2023

16:30 - 18:30

WIMP Collider searches

Rocío Vilar Cortabitarte

Profesora Contratada Doctora
Universidad de Cantabria (UC)

16/02/2023

16:30 - 18:30

Examples & Discussion: WIMP Dark Matter

Rocío Vilar Cortabitarte

Profesora Contratada Doctora
Universidad de Cantabria (UC)

21/02/2023

16:30 - 18:30

DM Candidates: Axions

Igor García Irastorza

Profesor titular de universidad en física atómica, molecular y nuclear
Universidad de Zaragoza

22/02/2023

16:30 - 18:30

Detecting and constraining Axions

Igor García Irastorza

Profesor titular de universidad en física atómica, molecular y nuclear
Universidad de Zaragoza

23/02/2023

16:30 - 18:30

Future of Axion Searches

Igor García Irastorza

Profesor titular de universidad en física atómica, molecular y nuclear
Universidad de Zaragoza

28/02/2023

16:30 - 18:30

Examples and & Discussion: Axion Dark Matter

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

01/03/2023

16:30 - 18:30

Primordial Black Holes as Dark Matter

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

02/03/2023

16:30 - 18:30

Alternative models of Dark Matter (MOND)

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

07/03/2023

16:30 - 18:30

Evidence for Dark Energy (DE)

José María Diego Rodríguez

Investigador Científico CSIC
Instituto de Física de Cantabria

08/03/2023

16:30 - 18:30

DE Models: CC, Quintessence, Modified Gravity...

José María Diego Rodríguez

Investigador Científico CSIC
Instituto de Física de Cantabria

09/03/2023

16:30 - 18:30

Constraining DE (current & future surveys)

José María Diego Rodríguez

Investigador Científico CSIC
Instituto de Física de Cantabria

14/03/2023

16:30 - 18:30

Examples & Discussion: Dark Energy

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

15/03/2023

16:30 - 18:30

Challenges of Λ CDM

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

16/03/2023

16:30 - 18:30

Future of Dark Matter searches

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

21/03/2023

16:30 - 18:00

Oral presentations

José María Diego Rodríguez

Investigador Científico CSIC
Instituto de Física de Cantabria

22/03/2023

16:30 - 18:00

Oral presentations

Bradley James Kavanagh

Postdoctoral researcher (in astroparticle physics)
Instituto de Física de Cantabria (Universidad de Cantabria/CSIC)

