

Rasmi E. Hajjar Muñoz

B.S. PHYSICS · M.S. THEORETICAL PHYSICS · PH.D. STUDENT THEORETICAL PHYSICS

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Education

B.Sc. in Physics

UNIVERSITY OF VALENCIA - ESTUDI GENERAL

Valencia, Spain

Sep. 2015 - Jul. 2019

M.Sc. in Theoretical Physics

UNIVERSITY OF VALENCIA - ESTUDI GENERAL

Valencia, Spain

Sep. 2019 - Jul. 2020

PhD Theoretical Physics: Neutrinos, Astroparticles and Cosmology

IFIC (CSIC- UNIVERSITY OF VALENCIA) AND SSM

Valencia, Spain

Nov. 2020 - PRESENT

Skills

LANGUAGES

SPANISH, mothertongue

CATALAN, mothertongue

ENGLISH, fluent

ITALIAN, intermediate

PROGRAMMING LANGUAGES

Python, own codes

C++ and C, modified CLASS and nuSQuIDS

Mathematica, own codes

LATEX, own documents

Publications

Neutrino Mass Ordering at DUNE: an Extra ν -Bonus

CHRISTOPH A. TERNES, STEFANO GARIAZZO, RASMI HAJJAR, OLGA MENA, MICHEL SOREL, MARIAM TORTOLA.

DOI: <https://doi.org/10.1103/PhysRevD.100.093004>

Physical Review D

21st November 2019

Heavy decaying dark matter at future neutrino radio telescopes

MARCO CHIANESE, DAMIANO F.G. FIORILLO, RASMI HAJJAR, GENNARO MIELE, STEFANO MORISI, NINETTA SAVIANO.

DOI: [10.1088/1475-7516/2021/05/074](https://doi.org/10.1088/1475-7516/2021/05/074)

JCAP

28th May 2021

Constraints on heavy decaying dark matter with current gamma-ray measurements

MARCO CHIANESE, DAMIANO F.G. FIORILLO, RASMI HAJJAR, GENNARO MIELE, NINETTA SAVIANO.

DOI: [10.1088/1475-7516/2021/11/035](https://doi.org/10.1088/1475-7516/2021/11/035)

JCAP

15th November 2021

Earth tomography with supernova neutrinos at future neutrino detectors

RASMI HAJJAR, OLGA MENA, SERGIO PALOMARES-RUIZ.

DOI: [10.1103/PhysRevD.108.083011](https://doi.org/10.1103/PhysRevD.108.083011)

Physical Review D

10th October 2023

Shedding light to the Δm_{21}^2 tension with supernova neutrinos

RASMI HAJJAR, OLGA MENA, SERGIO PALOMARES-RUIZ.

DOI: <https://doi.org/10.48550/arXiv.2307.09509>

arXiv preprint

18th July 2023

Secondments

Fermilab - Fermi National Accelerator Laboratory

NEUTRINOS IN COSMOLOGY AND ASTROPARTICLE PHYSICS

Description of work at Fermilab

Batavia, Illinois, USA

Jul. 2023 - Aug. 2023

Center for Cosmology and Astroparticle Physics - The Ohio State University

ROBUSTNESS OF NEUTRINO MASS MEASUREMENT IN COSMOLOGY

Description of work at CCAPP with Iván Esteban

Columbus, Ohio, USA

May. 2023 - Jul. 2023

Short Visits

Institut de Ciències del Cosmos - Universitat de Barcelona (ICCUB)

NEUTRINOS IN COSMOLOGY

Description of work at ICCUB with Jordi Salvadó

Barcelona, Spain

Nov. 2023

Teaching

Physics I

JOINT DEGREE IN PHYSICS AND MATHEMATICS AT THE UNIVERSITY OF VALENCIA

Description of Physics I and number of hours

Valencia, Spain

Sep. 2021 - Jan. 2022

Physics I

DEGREE IN CHEMISTRY AT THE UNIVERSITY OF VALENCIA

Description of Physics I and number of hours

Valencia, Spain

Sep. 2021 - Jan. 2022

Quantum Physics I

DEGREE IN PHYSICS AT THE UNIVERSITY OF VALENCIA

Description of Quantum Physics I and number of hours

Valencia, Spain

Sep. 2022 - Jan. 2023

Quantum Physics I

JOINT DEGREE IN PHYSICS AND CHEMISTRY AT THE UNIVERSITY OF VALENCIA

Description of Quantum Physics I and number of hours

Valencia, Spain

Sep. 2022 - Jan. 2023

Quantum Physics I

DEGREE IN PHYSICS AT THE UNIVERSITY OF VALENCIA

Description of Quantum Physics I and number of hours

Valencia, Spain

Sep. 2023 - Jan. 2024

Seminars

“Earth tomography with supernova neutrinos at future neutrino detectors”

CCAPP - THE OHIO STATE UNIVERSITY

Columbus, Ohio, USA

19th May 2023

“Earth tomography with supernova neutrinos at future neutrino detectors”

SCUOLA SUPERIORE MEDIDIONALE (SSM)

Naples, Italy

14th March 2023

Conferences

XX International Workshop on Neutrino Telescopes

ISTITUTO VENETO DI SCIENZE, LETTERE ED ARTI

· Talk: Earth tomography with supernova neutrinos at future neutrino detectors

Venice, Italy

Sep. 2023

TeV Particle Astrophysics

UNIVERSITY OF NAPLES FEDERICO II

· Talk: Earth tomography with supernova neutrinos at future neutrino detectors

· Talk: Multi-messenger lifetime constraints on heavy decaying dark matter

Naples, Italy

Sep. 2023

Invisibles 2023 workshop

UNIVERSITY OF GOETTINGEN

· Talk and poster: Shedding light to the Δm_{21}^2 tension with supernova neutrinos.

Goettingen, Germany

Aug. 2023

Invisibles 2022 workshop

UNIVERSITY PARIS-SACLAY

· Talk and poster: Supernova neutrino Earth tomography: myth or reality?

Orsay, France

Jun. 2022

@FlipPhysics workshop

INSTITUTO DE FÍSICA CORPUSCULAR (IFIC)

Valencia, Spain

Mar. 2022

3rd GNN Workshop on Indirect Dark Matter Searches with Neutrino Telescopes

FACULTY OF SCIENCE - UNIVERSITY OF GRANADA

· Talk: Multi-messenger lifetime constraints on heavy decaying dark matter

Granada, Spain

Mar. 2022

17th International Conference on Topics in Astroparticle and Underground Physics

INSTITUTO DE FÍSICA CORPUSCULAR (IFIC)

· Talk: Multi-messenger lifetime constraints on heavy decaying dark matter

Valencia, Spain (online)

Aug. 2021

NuCo 2021 - Neutrinos in Colombia

CONHEP

· Talk: Heavy decaying dark matter at future neutrino radio telescopes

Colombia (online)

Jul. 2021

37th International Cosmic Ray Conference (ICRC)

DESY

· Talk: Testing the stability of heavy dark matter with up-coming radio neutrino telescopes

Berlin, Germany (online)

Jul. 2021

Invisibles 2021 workshop

INSTITUTO DE FÍSICA TEÓRICA (IFT)

· Poster: Heavy decaying dark matter at future neutrino radio telescopes

Madrid, Spain (online)

Jun. 2021

XIV International Conference on Interconnections between Particle Physics and Cosmology

UNIVERSITY OF OKLAHOMA

· Talk: Heavy decaying dark matter at future neutrino radio telescopes

Oklahoma, USA (online)

May. 2021

WOPM (Workshop on Optically Pumped Magnetometers)

HELMHOLTZ INSTITUTE OF MAINZ (HIM)

Mainz, Germany

Aug. 2019

HOW 2018

INSTITUTO DE FÍSICA CORPUSCULAR (IFIC)

Valencia, Spain

Nov. 2018

Schools

First EUAPT School: Cosmology

INSTITUTO DE FÍSICA CORPUSCULAR (IFIC)

Valencia, Spain

Sep. 2023

XXXIII Canary Island Winter School

INSTITUTO DE ASTROFÍSICA DE CANARIAS

· Poster: Earth tomography with supernova neutrinos at future neutrino detectors

La Laguna, Spain

Nov. 2022

Invisibles 2022 school

UNIVERSITY PARIS-SACLAY

· Poster: Supernova neutrino Earth tomography: myth or reality?

Orsay, France

Jun. 2022

TAE 2021 International School on High Energy Physics

CENTRO DE CIENCIAS DE BENASQUE PEDRO PASCUAL

Benasque, Spain

Sep. 2021

Invisibles 2021 school

INSTITUTO DE FÍSICA TEÓRICA

Madrid, Spain (online)

Apr. 2021

Theoretical Aspects of Astroparticle Physics, Cosmology and Gravitation

THE GALILEO GALILEI INSTITUTE FOR THEORETICAL PHYSICS

· Talk: Heavy decaying dark matter at future radio neutrino telescopes

Florence, Italy (online)

Feb. 2021

Challenges for the Standard Cosmological Model

IV JOINT ICTP-TRIESTE/ICTP-SAIFR SCHOOL ON COSMOLOGY

São Paulo, Brazil (online)

Jan. 2021

Outreach

High School Outreach talks of Astroparticle Physics

INSTITUTO DE FÍSICA CORPUSCULAR (IFIC)

Comunitat Valenciana, Spain

2024

- Instituto 1
- Instituto 2

II Fira de la Ciència

PARC "MOLÍ D'ANIMETA"

Quart de Poblet, Spain

23rd September 2023

Expociencia 2023

PARC CIENTÍFIC UNIVERSITAT DE VALÈNCIA (PC-UV)

Valencia, Spain

6th May 2023

Expociencia 2022

PARC CIENTÍFIC UNIVERSITAT DE VALÈNCIA (PC-UV)

Valencia, Spain

28th May 2022

Collaborator of XIV Fair-Contest Experimenta

PRINCÍPE FELIPE SCIENCE MUSEUM

Valencia, Spain

7th April 2019

Collaborator of XII Fair-Contest Experimenta

PRINCÍPE FELIPE SCIENCE MUSEUM

Valencia, Spain

2nd April 2017

Human Rights

Member of the Equality and Diversity Committee of the IFIC

INSTITUTO DE FÍSICA CORPUSCULAR (IFIC)

Valencia, Spain

Nov. 2023 - PRESENT

Fellowships

Scuola Superiore Meridionale Fellowship

COSMOLOGY, SPACE SCIENCE AND SPACE TECHNOLOGIES

Naples, Italy

Nov. 2020 - Sep. 2021

Mainz Summer Program

ANOMALOUS MAGNETIC MOMENT OF THE MUON PROBLEM

Mainz, Germany

Aug. 2019 - Sep. 2019

Spanish Ministry of Education Collaboration Fellowship

NEUTRINO OSCILLATION PHYSICS AND HIERARCHY

Valencia, Spain

Jan. 2019 - Jun. 2019

JAE Intro CSIC Fellowship

DARK MATTER SURVEY WITH NEUTRINO TELESCOPES ANTARES AND KM3NeT

Valencia, Spain

Sep. 2018 - Dec. 2018

IFIC's Severo Ochoa Summer Student Fellowships

NEUTRINO ASTRONOMY WITH ANTARES NEUTRINO TELESCOPE

Valencia, Spain

Jul. 2018

Erasmus+ Fellowship

PHYSICS STUDENT AT THE UNIVERSITY OF LEEDS

Leeds, UK

Sep. 2017 - Jul. 2018