


Pep Covas Vidal

P. B. Covas

Curriculum Vitae

 pepcv.gitlab.io

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Personal information

Name Josep Blai Covas Vidal
Birthdate 17/05/1993
Birthplace Palma (Spain)
Email jb.covas@uib.es, blaipep@hotmail.com

Education

2011–2015 **Physics degree**, *Universitat de les Illes Balears*, Bachelors thesis: "Neutron stars as sources of gravitational waves". Thesis director: Dr. Alicia Sintés. Grade: 9.0
2013–2014 **SICUE exchange at Universitat Barcelona**, *Optional subjects: Astronomy, Observational Astronomy, Astrophysics and Cosmology, General Relativity*
2015–2016 **Masters degree in Advanced Physics and Applied Mathematics (with a specialty in General Relativity and Astrophysics)**, *Universitat de les Illes Balears*, Masters thesis: "Characterization of the Hough all-sky search for continuous gravitational wave signals using LIGO data". Thesis director: Dr. Alicia Sintés. Grade: 9.0
2016–2020 **Doctoral Degree in Physics**, *Universitat de les Illes Balears*, Title: "Searching for continuous gravitational waves with Advanced LIGO". Thesis director: Dr. Alicia Sintés

Work experience

2015–2017 **Scientific/Technical support at the Relativity and Gravitation group of the University of the Balearic Islands**, *Maintainer of the group web page (grg.uib.es), Twitter account manager (@UIBGRG), maintainer of the group computational assets (clusters, wikis, ...)*, Hired by Garantia Juvenil 01/12/2015 - 30/11/2017 094977 - PEJ-2014-P-00477 J. B. COVAS
2018–2020 **PhD student with FPI-CAIB FPI/2134/2018 fellowship**
2020–2022 **Junior postdoc at the Continuous Gravitational Waves group of the Max Planck Institute for Gravitational Physics**
2022–2024 **Marie Curie Individual Fellowship at the Continuous Gravitational Waves group of the Max Planck Institute for Gravitational Physics**
2024 **Junior postdoc at the Continuous Gravitational Waves group of the Max Planck Institute for Gravitational Physics**
2024– **Assistant professor (professor ajudant doctor) at the University of the Balearic Islands**

———— Papers with direct contribution

A full list of refereed papers can be found here: <https://orcid.org/0000-0002-1845-9309>

- 2024 **Search for continuous gravitational waves from unknown neutron stars in binary systems with long orbital periods in O3 data**, *P. B. Covas et al.*, arXiv
- 2024 **New framework to follow up candidates from continuous gravitational-wave searches**, *P. B. Covas et al.*, Physical Review D
- 2024 **Bayesian \mathcal{F} -statistic-based parameter estimation of continuous gravitational waves from known pulsars**, *A. Ashok et al.*, Physical Review D
- 2022 **Improved all-sky search method for continuous gravitational waves from unknown neutron stars in binary systems**, *P. B. Covas et al.*, Physical Review D
- 2022 **Improved short-segment detection statistic for continuous gravitational waves**, *P. B. Covas et al.*, Physical Review D
- 2022 **Constraints on r-modes and Mountains on Millisecond Neutron Stars in Binary Systems**, *P. B. Covas et al.*, The Astrophysical Journal Letters
- 2020 **Effects of proper motion of neutron stars on continuous gravitational-wave searches**, *P. B. Covas*, Monthly Notices of the Royal Astronomical Society
- 2020 **First All-Sky Search for Continuous Gravitational-Wave Signals from Unknown Neutron Stars in Binary Systems Using Advanced LIGO Data**, *P. B. Covas et al.*, Physical Review Letters
- 2019 **All-sky search for continuous gravitational waves from isolated neutron stars using Advanced LIGO O2 data**, *LIGO Scientific Collaboration et al.*, Physical Review D
- 2019 **New method to search for continuous gravitational waves from unknown neutron stars in binary systems**, *P. B. Covas et al.*, Physical Review D
- 2018 **Identification and mitigation of narrow spectral artifacts that degrade searches for persistent gravitational waves in the first two observing runs of Advanced LIGO**, *LSC Instrument Authors et al.*, Physical Review D

———— Projects

- 2018 **PI of FPI-CAIB FPI/2134/2018**, *Grant to carry out the PhD project "Searching for continuous gravitational waves with Advanced LIGO"*, December 2018 - November 2022
- 2019 **PI of computational grant at RES with CTE/Power9 computer (Barcelona Supercomputing Center)**, *AECT-2019-1-0021: All-sky searches of continuous gravitational-wave signals from spinning neutron stars in binary systems*, March 1st - June 30th (2019)
- 2019 **PI of computational grant at RES with CTE/Power9 computer (Barcelona Supercomputing Center)**, *AECT-2019-3-0011: All-sky searches of continuous gravitational-wave signals from spinning neutron stars in binary systems using Advanced LIGO O3 data*, November 1st - February 28th (2019-2020)
- 2022 **PI of Marie Curie Individual Fellowship 101029058**, *Grant to carry out the project "All-sky search for continuous gravitational waves from neutron stars in binary systems"*, May 2022 - April 2024

2022 **PI of computational grant at PRACE with JUWELS Booster computer (Jülich Supercomputing Centre), 2021250054 (24th project access call): Continuous gravitational waves from unknown neutron stars in binary systems**, April 2022 - March 2023

Research stays

- 2017 **LIGO Hanford Observatory**, *LSC Fellow, work related to detector characterization and line/comb hunting*, May - July 2017
- 2018 **Sapienza Università di Roma**, *STSM belonging to the Cost Action CA16104, work related to adapting SFDB input data to LALSuite code*, September 2018
- 2018 **Max Planck Institute for Gravitational Physics**, *STSM belonging to the Cost Action CA16214, work related to LISA data analysis*, October 2018
- 2019 **LIGO Hanford Observatory**, *LSC Fellow, work related to detector characterization, line/comb hunting and calibration*, March - June 2019

Reviewer of

- 2019 **Advanced LIGO O2 all-sky results from FrequencyHough pipeline**
2022– **Physical Review D journal**

Teaching and mentoring

- 2018 - 2019 **Partial Differential Equations I**, *Assistant lecturer, University of the Balearic Islands*
- 2018 - 2019 **Mentoring master student**, *Rodrigo Tenorio, Master thesis: "Towards a reformulation of the Hough method for continuous gravitational wave searches"*
- 2019 - 2020 **Partial Differential Equations I**, *Assistant lecturer, University of the Balearic Islands*
- 2022 - 2024 **Co-director of master thesis**, *Paul Ophardt, Master thesis: "Impact of detector networks on the sensitivity of continuous gravitational wave searches"*
- 2023 **Introduction to data analysis**, *Lecturer at IMPRS Lecture Week 2*

Outreach and congress organization activities

- 2015 **Member of the local organizing committee of the "Spanish Relativity Meeting 2015"**, *7-10 September 2015, Palma, Spain*
- 2016 **Participant in the "III Jornades de Ciència per a Tothom"**, *5-7 May 2016, Palma, Spain*
- 2016 **Participant in the "IV Jornades de divulgacion Innovadora"**, *21-22 October 2016, Zaragoza, Spain*
- 2017 **Participant in the TV programme "Balears fa ciència. Mirant al cel: ones gravitacionals, xips, i nines enginyeres"**, *31 December 2017, Palma, Spain*
- 2020 **Participant in the "1st UIB scientific outreach competition"**, *article "Gravitational waves and neutron stars"*, *01 February 2020, Palma, Spain*
- 2024 **Main organizer of the "Continuous gravitational waves and neutron stars workshop"**: <https://plan.events.mpg.de/event/133/>, *17-20 June 2024, Hannover, Germany*

Computer skills

OS Windows, Mac OS X, Linux (as a user and administrator)

Languages C, CUDA, Bash, TeX, Python, MATLAB, HTML

Contributed to several codes part of the LALSuite library git.ligo.org/lscsoft/lalsuite

Languages

Catalan Mother tongue

Spanish Mother tongue

English C2 (Cambridge English Language Assessment)

German B2 level

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