

José Alberto Vázquez G. | Centro de Investigación y de

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Current Position

Centro de Investigación y de Estudios Avanzados del IPN.

CDMX, MX

Associate Professor - Catedrático CONACYT, Prof. O. Miranda & Prof. T. Matos.

Nov.2016 -

I started my career as a theoretical cosmologist and slowly moving to statistics, astrophysics and data analysis.

My current interests are mainly focused on the construction of a map of the universe based on the statistical properties of the Galaxies observed through the Sloan Digital Sky Survey (SDSS); on the parameter estimation and model selection of cosmological models through Bayesian statistical techniques.

Interests

Programming, Data analysis, MCMC, Bayesian Statistics, Cosmology.

[Website](#), [LinkedIn](#), [GitHub](#)

<http://www.cosmo.bnl.gov/www/jvazquez/>

Education and Work Experience

Brookhaven National Lab, U.S. Department of Energy.

NY, US

Post-doctoral Research Associate. Prof. A. Slosar.

2013 - 2016

KICC, University of Cambridge.

Cambridge, UK

Ph.D. in Astrophysics, Prof. A. Lasenby and Prof. M. Hobson.

2009-2013

"Constraining alternative cosmological models with current and future observations".

DAMTP, University of Cambridge.

Cambridge, UK

MASt. in Mathematics, Dr. A. Challinor.

2008-2009

Physics Department, CINVESTAV.

DF, MX

M.Sc. in Physics, Prof. T. Matos.

2005-2007

Faculty of Sciences, UAEMor.

Morelos, MX

B.Sc. in Physics, Prof. T. Matos.

2000-2005

Research Internships

Physics Department, CINVESTAV.

DF, MX

Visiting Researcher, hosted by Prof. T. Matos.

Jun-Oct.13'

Physics Department, CINVESTAV.

DF, MX

Graduate Research Assistant, hosted by Prof. T. Matos.

2007-2008

Friedrich-Schiller-Universitat Jena.

Jena, DE

Short-term research visitor, hosted by Prof. B. Bruggemann.

Jun-Sept.06'

Selected Awards & Scholarships

2015: Invited for a plenary talk on behalf of the BOSS collaboration to the APS meeting.

2014: Invited for a plenary talk on behalf of the BOSS collaboration to the SDSS-IV meeting.

2013: National System of Researchers, Level 1 (SNI 1).

2013: PhD award for academic purposes, Cavendish Laboratory, Cambridge.

2012: Tutorial award for academic purposes, St Edmund's College, Cambridge.

2012: American Alumni award, for traveling to the US for studies. St Edmund's College, Cambridge.

2008-2012: SEP Excellence program scholarship, complementary scholarship.

2008-2012: CONACyT full scholarship, for study towards a MAST and PhD, U. of Cambridge.

2006: Research grant for young scientists. *Awarded by the German Academic Exchange Service (DAAD).*

2005-2007 : CONACyT full scholarship, for study towards a Master, CINVESTAV.

2004-2005: Undergraduate Research Assistantship (from SNI-III), UAEM-CINVESTAV.

2004 : Undergraduate Teaching Assistantship, UAEM.

Press Release.....

07.2016: US Department of Energy: Dark Energy Measured With Record-Breaking Map of 1.2 Million Galaxies [link](#)

07.2016: LBNL, Berkeley Lab: Dark Energy Measured with Record-Breaking Map of 1.2 Million Galaxies [link](#)

07.2016: Physicsworld: Dark-energy study maps 1.2 million galaxies in the early universe [link](#)

04.2015: APS meeting on behalf of the BOSS Collaboration [link](#)

06.2012: Talented Mexicans abroad. TV short interview (Televisa)

Academic experience

Publications : Author and coauthor of 26 publications in distinguished journals, three conference proceedings and two science review papers. Over half of the papers as a principal author, and two of them leading a collaboration of more than a hundred author-paper.

For further details and citations: [Google Scholar](#), [Inspire](#), [Research gate](#)

Invited talks and travel grants: I have been awarded with travel grants to attend conferences and workshops. Some of the institutions include: ICTP, Trieste, IT; Cambridge, UK; SLC, UT, USA; Cabo, MX; Harvard, MA, USA; Passo del Tonale, IT; Stanford, CA, USA; AIE, Berlin, DE; Ensenada, MX; CMU, PA; Aspen, CO; ITU, Istanbul; Berkeley, CA; UNAM, MX.

Organization: Workshop Organizer: "Statistical and Numerical methods in Cosmology" (50 participants), IF, UNAM. Mini-workshop Organizer: "Overview to CAMB and CosmoMC" (25 participants), ININ. Seminar group Organiser: "Geometry and Gravitation", CINVESTAV. Seminar group Organizer: "Cosmology, Astrophysics and Numerical relativity", CINVESTAV.

Hacking

10.2016: PyData. Washington, DC, US

08.2016: PyData. U Chicago, IL, US

07.2016: PyGotham & Database Camp. United Nations, NY, US

07.2016: Summer school in Statistics in R. PennState, PA, US

06.2016: 8th Astronomical Data Analysis Summer School. Chania, GR

01.2015: Symposium and Hack Week on data-intensive cosmology. Berkeley, CA, US

04.2015: SciCoder 6 Workshop. NYU, US

Skills and Interests

Programming Languages: Python, C/C++, Fortran, R, Bash Scripting

Maths: Maple, Mathematica, Matlab (basic)

Op. Systems: Linux, Windows, Mac OS X

Databases: MySQL, SQLite

Useful: Latex, HTML, CSS, Gnuplot, Git, SVN

Packages, libraries and frameworks.....

Python: Numpy, Pandas, Scipy, Scikit-learn, Beatiful Soup, Matplotlib, Bokeh, Seaborn, Flask.

R: dplyr, Main ones for Stats and ML, ggplot2, Shiny

C/C++, Fortran: LAPACK, OpenMP, MPI

HPC Clusters: NERSC(LBNL), Astro (BNL), Darwin (Cambridge), LaSuma-(CINVESTAV)

Cosmology.....

Contributions: MCMC for BAO analysis for the BOSS collaboration (Python) - [SimpleMC](#)

. Massively parallelizable Gaussian Embedding Sampling (Python) - [GM algorithm](#)

. Model Independent Bayesian Reconstruction (Fortran) - [NP-CAMB](#)

Lyman- α analysis for the BOSS collaboration (C++) - [Cosmology](#)

Non-Academic Projects.....

Scraping the web, Using APIs, Data manipulation with Pandas and SQL, Playing with Stats and ML algorithms and Visualizations.

For further details see: [GitHub](#), [Bitbucket](#).

Meetups: I regularly attend NYC meetups with keywords such as Python, R, SQL, Data science.

Others

Languages:

Spanish (Native); English (Fluent); German (Elementary).

Sports:

Football (participation on national tournaments), Squash, Climbing, Jogging, Cycling.

Organiser of the national football tournament of Mexican Societies in UK (05.2010).

Others:

Reading: Economy, Science, Science Fiction; Board games: Chess, Backgammon, Poker.