José-Alberto Vázquez | Brookhaven National Lab, U.S.

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Current Position

Brookhaven National Lab, U.S. Department of Energy. <div align="right">NY, US</div>
Post-doctoral Research Associate. Prof. A. Slosar. <div align="right">Oct.2013 -</div>

I started my career as a theoretical cosmologist and slowly moving to statistics, astrophysics and data analysis. I am a post-doctoral research associate at the Brookhaven National Lab (BNL), and member of the Sloan Digital Sky Survey (SDSS).

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 SDSS survey; 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

KICC, University of Cambridge. <div align="right">**Cambridge, UK**</div>
Ph.D. in Astrophysics, Prof. A. Lasenby and Prof. M. Hobson. <div align="right">2009-2013</div>
"Constraining alternative cosmological models with current and future observations".

We present Bayesian techniques -Bayesian evidence, nested sampling and neural network algorithms- to compare cosmological models in the light of the currently available data and forecasts for the next generation of experiments.

DAMTP, University of Cambridge. <div align="right">**Cambridge, UK**</div>
MASt. in Mathematics, Dr. A. Challinor. <div align="right">2008-2009</div>

Physics Department, CINVESTAV. <div align="right">**DF, MX**</div>
M.Sc. in Physics, Prof. T. Matos. <div align="right">2005-2007</div>

Faculty of Sciences, UAEMor. <div align="right">**Morelos, MX**</div>
B.Sc. in Physics, Prof. T. Matos. <div align="right">2000-2005</div>

Research Internships

Physics Department, CINVESTAV. <div align="right">**DF, MX**</div>
Visiting Researcher, hosted by Prof. T. Matos. <div align="right">Jun-Oct.13'</div>

Physics Department, CINVESTAV. <div align="right">**DF, MX**</div>
Graduate Research Assistant, hosted by Prof. T. Matos. <div align="right">2007-2008</div>

Friedrich-Schiller-Universitat Jena. <div align="right">**Jena, DE**</div>
Short-term research visitor, hosted by Prof. B. Brugmann. <div align="right">Jun-Sept.06'</div>

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.

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 of 23 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" (15 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.