Curriculum Vitae

Pablo H. Echevarría

Agile methodologies enthusiastic, team player, lover of complex and challenging problems

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LAST PROJECTS

- I'm on charge to carry on the releases of the auto-ecearth auto model earth system [dev.ec-earth.org] [https://goo.gl/8iC5QE]

  I introduced agile development concepts in my team improving the quality of the code and the process. The use of Kanban, peer code review and testing helped us to get to a near continuous integration scheme.

  I'm self-directed, I led technical developments and improvements in the team. The last project I led was developing a configuration checker in Python3 using TDD methodology.

  I work very close to the Operations Department. Currently as a part of a new project I'm working with docker to containezer our software.

  I have given talks in festa de la ciencia 2018 and 2019 science exposition and a class about "how to run an Earth EC climate model in Marenostrum"

  Keys: Agile, Kanban, per review, containers, TDD, continuos improvenment, Python3

- I was in charge on a training the 2^{nd} ed. Workshop in programming techniques for science [wp.df.uba.ar/wtpc].
- Developed a Backend for WRF (Wheather Research Forecasting) operational [bitbucket.org/pablohe/run_wrf].
- Designed the specifications for the new operational cluster valuated in us $ 250.000 : 240 cores, processor type, storage, network for WRF operational.
- Developed tools for maps visualizations using Python and basemap libraries for waves fields and satellites observations.[https://cutt.ly/Pe3WFN9]
- Worked as sysadmin, installed libraries, dependencies.
- Installed WRF: deal with dependencies in different platforms and compilers: GNU and Intel.
- Evaluated WRF prerformance in a 4000 cores cluster [tupac.conicet.gov.ar].

EDUCATION

2013 – **MS degree in Computer Science** Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires (UBA). Final work: Data assimilation in a wave model enriched with the wind analysis (goo.gl/nTRnNR).

SKILLS

Advanced: OOP, Design Patterns, Python, Bash, Fortran, MPI, Open-MP, HPC, compilers (GNU/Intel).

Intermediate: C++, PHP, Java, Haskell, Assembler, SQL, javascript, TDD.

Beginner: HTML, CSS, Node.js, CUDA, pThreads, networking.

RESEARCH

Data Assimilation in Numerical Weather Prediction: WRF (www.wrf-model.org). In my old position the goal was to develop a new data assimilation system and update current ETA model for WRF model and determinate the technology and dimensions (processors, memory, storage and network) to buy a new cluster. I also help

meteorologist to use models and systems. For example, debugging, design new pieces of software and process automation. Since the last six years I've been working at a National Weather Service - National Hydrographic Service project. It consists of data assimilation (4D-LETKF - Dr. Miyoshi Takemasa implementation) and wave model NOAA WWIII, assimilating altimeter data from Jason-1 and Jason-2 satellites and scatterometer data from Metop-A satellite. LETKF and NOAA WWIII run using MPI in our cluster.

EMPLOYMENT

2017 - currently	Earth Sciences scientist support engineer | Barcelona Super Computer Center [www.bsc.es]
2016 - 2016	Sr Software Developer | Core Security [www.coresecurity.com]
2012 - 2016	Staff. | Research and development. | National Weather Service [www.smn.gov.ar] **Project:** Models Data Assimilation **Director:** Yanina Garcia Skabar - yanina@smn.gov.ar | Paula Etala petala@smn.gov.ar **Details:** Integration of Marine Modeling and Data Assimilation and start working on DA in WRF model.
2010 - 2012	Fellowship.| Naval Hydrographic Service [www.hidro.gov.ar] working at the National Weather Service [www.smn.gov.ar]. **Project:** PIDDEF 46/10: Integration of Marine Modeling and Data Assimilation **Director:** Paula Etala - paulaetala@gmail.com **Details:** The project involves the implementation of Local Ensemble Transform Kalman Filter (LETKF) (Weather & Chaos, University of Maryland) for the wave model NOAA WAVEWATCH III© with the goal of assimilating significant wave height altimeter observations.

TRAINING

- **2019 Containers hackathlon for modellers** - CSCS - Lugano, Switzerland
- **2015 Waves Summer School** - UMD - NOAA - USMFoundation - College Park, Marynd, USA
- **2015 2NCC/ICTP-SAIFR School and Workshop on Advanced Techniques in Scientific Computing** – ICTP (UNESCO) – SAIFR Scholarship – Sao Paulo, Brazil – WORKSHOP
- **2014 School on Parallel Programming and Parallel Architecture for HPC and Developer School for HPC applications in Earth Sciences** – ICTP (UNESCO) – Scholarship – Trieste, Italy – WORKSHOP
- **2013 Workshop High Performance Computing 2013** – Scholarship – Cordoba, Argentina – WORKSHOP
- **2013 20° Escuela De Verano De Ciencias Informáticas** – RIOh 2013 Cordoba, Argentina – COURSE Introduction to de Heteroneous Computing, Dr. Nicolás Wolovick, Lic. Carlos Bederián
- **2012 High–Performance Computing Latin America** – Cordoba, Argentina – SYMPOSIUM/COURSE
- **2012 Marine Training Workshop on the Use of Satellite Wind and Wave Products in South American Waters** – Sao Paulo, Brazil– Scholarship – NASA | UCAR | EUMESAT | ECOS | NOAA
- **2011 DA, Data Assimilation and Filtering Theory** 120 hs Postgraduate Course. Facultad de Ciencias Exactas y Naturales – Universidad Nacional del Noreste – Corrientes, Argentina (FACENA – UNNE)

MEETINGS AND CONFERENCES

- **2014 Symposium on HPC and Data-Intensive Applications in Earth Sciences ICTP Trieste - Scholarship - ICTP (UNESCO) – Italy – WORKSHOP**
- **2013 Sixth WMO Symposium on Data Assimilation "4D-LETKF Data Assimilation in a WAVEWATCH III® Wave Model Ensemble"** Pablo Echevarria and Paula Etala. Work assigned to be a poster presentation.
- **2013 SciPycon Madryn 2013** Poster: Maps of Data Assimilation of a Ocean Wave Model and another usefull tools developed in Python.
- **2012 First results and validation of marine surface wind speed obtained from SAC-D/Aquarius MWR.** Carolina Tauro[1], Paula Etala[2], **Pablo Echevarria**[4] ; Y.Hejazin[3], M. Jacob[1], L. Jones[3]

- **2012 Storm Surge Water Level Data Assimilation along the Argentine Coast**. Paula Etala[2], Martín Saraceno[5],[6] ,[7] ; **Pablo Echevarría**[4]
  "Exploring the Use of Data Assimilation Methods for the Detection and Attribution of Climate Change"
- **2012 Towards assimilation of satellite altimetry products into a storm-surge model ensemble along the Argentine coast**. Paula Etala[2], Martín Saraceno[5],[6] ,[7], **Pablo Echevarría**[4]
- **2012 Progress in the Wave Forecast Model up to a Global Multiscale Mosaic** Etala , Paula; Stella Maris Alonso; Débora Souto; Claudia Romero; **Pablo Echevarría**.
  CONGREMET XI, pp. 11 , http://www.congremet.prmarg.org/upload/etalapaula.pdf
- 2011 Colaboration in **"Recent developments and a proposed scheme for assimilation in the operational surge-tide-wave prediction system in Argentina"**
  Workshop on Storm Surge Monitoring and Extreme Sea Levels and the Need for High-Quality Real-Time Sea Level Data