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## EDUCATION

**PhD in Meteorology**, Freie Universität Berlin and Helmholtz Research School for Explorative Simulation in Earth Sciences GEOSIM, 07/2011 – 06/2015, *Magna cum laude*. Thesis: *Towards Paleoclimate Reanalysis via Ensemble Kalman Filtering, Proxy Forward Modeling and Fuzzy Logic*, Advisers: Prof. Ulrich Cubasch and Prof. Sebastian Reich.

**MSc in Physics**, National University of Colombia, Physics Department, Bogotá, Colombia, 07/2004 – 12/2006, GPA 4.6/5.0, Thesis: *Quantum transport in a spatially periodic magnetic billiard*. Adviser: Prof. Thomas Dittrich.

**BSc in Physics**, National University of Colombia, Physics Department, Bogotá, Colombia, 02/1996 – 04/2004, GPA 4.0/5.0, *Magna cum laude*, Thesis: *Classical transport in a spatially periodic magnetic billiard*. Adviser: Prof. Thomas Dittrich.

## RESEARCH INTERESTS

Data assimilation, Bayesian inference methods, ensemble forecasting, paleoclimate reconstruction techniques and proxy forward modeling.

## PROFESSIONAL EXPERIENCE

**Potsdam Universität**, Mathematics Institute, Potsdam, 04/2016 – present. **Postdoctoral Researcher**.

**Freie Universität Berlin**, Collaborative Research Center 1114 "Scaling Cascades in Complex Systems", Berlin, 10/2015 – 03/2016. **Postdoctoral Researcher**.

**La Salle University**, Basic Sciences Department, Bogotá, Colombia. 08/2010 – 02/2011. **Lecturer**.

**Antonio Nariño University**, Physics Department, Bogotá, Colombia. 01/2009 – 06/2010. **Lecturer**.

**Pedagogical and Technological University of Colombia (UPTC)**, Department of Physics, Tunja, Colombia. 08/2008 – 01/2009. **Lecturer**.

## PUBLICATIONS

**W. Acevedo**, J. de Wiljes and S. Reich, *Second-order accurate ensemble transform particle filters*, accepted under minor corrections for SIAM J. Sci. Comp, (2017).

**W. Acevedo**, B. Fallah, S. Reich and U. Cubasch, *Assimilation of Pseudo-Tree-Ring-Width observations into an Atmospheric General Circulation Model*, accepted under minor corrections for Climate of the Past (2017).

- W. Acevedo**, S. Reich and U. Cubasch, *Towards the assimilating of tree-ring-width records using Ensemble Kalman Filtering techniques*, Climate Dynamics, DOI: 10.1007/s00382-015-2683-1 (2015).
- W. Acevedo**, U. Cubasch, S. Reich and K. Matthes, *Forward modelling of tree-ring width chronologies from the Spanish Pyrenees using VS-Lite model*, **TRACE - Tree Rings in Archaeology, Climatology and Ecology** **11**, 56-59, DOI: 10.2312/GFZ.b103-13058. (Potsdam, Germany, 2013).
- W. Acevedo** and T. Dittrich, *Directed Transport in classical and quantum chaotic billiards*, Journal of Physics A: Mathematical and Theoretical **42**, 045102 (19pp) (2009).
- W. Acevedo** and T. Dittrich, *Directed transport in a spatially periodic magnetic billiard*, Progress of Theoretical Physics Supplement **150**, pp. 313–316 (2003).
- W. Acevedo**, T. Dittrich and C. Pineda, *Chaotic ratchets: dissipative vs. hamiltonian, classical vs. quantum*, Nova Acta Leopoldina **88**, 332, pp. 279–291 (Halle, Germany, 2003).
- W. Acevedo**, C. Pineda y T. Dittrich, *Matracas clásicas hamiltonianas y disipativas*, Rev. Col. Fís. **34**, 1, pp. 380–384 (2002).

## TALKS

- W. Acevedo**, S. Reich and M. Reinhardt, *Nonlinear data assimilation via hybrid particle-Kalman filters and optimal coupling*, 3rd RIKEN International Symposium on Data Assimilation (RISDA2017), Feb. 27–March 02, 2017, Kobe, Japan, **(Invited)**.
- W. Acevedo**, S. Reich and M. Reinhardt, *Hybrid Approach to High Dimensional Non-Gaussian Data Assimilation*, 5th annual International Symposium on Data Assimilation (ISDA2016), July 18–22, 2016, Reading, UK.
- W. Acevedo**, S. Reich and M. Reinhardt, *A Hybrid Ensemble Transform Filter for High Dimensional Dynamical Systems*, 2016 SIAM Conference on Uncertainty Quantification, April 5-8, 2016, Lausanne, Switzerland.
- W. Acevedo**, N. Chutsagulprom and S. Reich, *Non-Gaussian data assimilation via a localized hybrid particle-ensemble Kalman filter*, International Conference on Scientific Computation And Differential Equations (SciCADE 2015), September 14-18, 2015, Potsdam, Germany.
- W. Acevedo**, S. Reich and U. Cubasch, *On the Assimilation of Tree-Ring-Width Chronologies*, European Geophysical Union (EGU) General Assembly 2015, April 13–17, 2015, Vienna, Austria.
- W. Acevedo**, S. Reich, U. Cubasch and K. Matthes, *Data assimilation of tree-ring-width-like observations using ensemble Kalman filtering techniques*, 2013 Interdisciplinary Summer School “Data Assimilation in Geosciences”, University of Maryland, June 3-14, 2013, College Park, USA.
- W. Acevedo**, U. Cubasch, K. Matthes and I. Dorado, *Towards paleoclimate reconstruction using tree-ring growth forward models and ensemble Kalman filter techniques*, Colloquium in Climate, Climate Impact and Remote Sensing, Geographischen Institut der Universität Bern, December 2012, Bern, Switzerland, **(Invited)**.

## POSTERS

- W. Acevedo**, S. Reich and U. Cubasch, *Towards the assimilation of Tree-Ring-Width Chronologies*, Autumn School “Data Assimilation in Biogeochemical Cycles”, Abdus Salam International Centre for Theoretical Physics (ICTP), September 22-27, 2014, Trieste, Italy.

- W. Acevedo**, I. Dorado, U. Cubasch, K. Matthes and S. Reich, *Data assimilation of tree-ring-width-like observations using ensemble Kalman filtering techniques*, International Workshop Methods of Chaos Detection and Predictability (MCDPTA13), 17 - 21 June 2013, Dresden, Germany.
- W. Acevedo**, I. Dorado, U. Cubasch, K. Matthes and S. Reich, *Process-based forward modelling of European tree-ring width chronologies using models of the Vaganov-Shashkin family*, Third International Conference on Earth System Modelling (3ICESM), Hamburg, September 2012.
- W. Acevedo**, U. Cubasch, K. Matthes and S. Reich, *Data assimilation approach to paleoclimate reconstruction using tree-ring growth forward models and ensemble Kalman filter techniques*, TRACE 2012 Conference, 9–12 May 2012, Potsdam and Eberswalde, Germany.

## SCHOOLS AND WORKSHOPS ATTENDED

- Workshop “Mathematical and Algorithmic Aspects of Data Assimilation in the Geosciences”**, Mathematisches Forschungsinstitut Oberwolfach (MFO), October 2–8, 2016, Oberwolfach-Walke, Germany.
- Autumn School “Statistical and mathematical tools for the study of climate extremes”**, Institut de Physique de Cargèse, November 9–13, 2015, Corsica, France.
- GeoSim doctoral programme** comprised schools on (i) Mathematical Modeling and Numerics for Geophysical Flows and Applications, (ii) Meteorological and Hydrological Measurement and Modelling Techniques, (iii) Data Assimilation and Statistical Modelling of Extreme Values, and (iv) Software Development and Scientific Computing and (v) Hybrid, stochastic and computational methods - the world of hydrological modeling.
- Autumn School “Data Assimilation in Biogeochemical Cycles”**, Abdus Salam International Centre for Theoretical Physics (ICTP), September 22-27, 2014, Trieste, Italy.
- 2013 Interdisciplinary Summer School “Data Assimilation in Geosciences”**, University of Maryland, June 3-14, 2013, College Park, USA.
- Geo.X Summer School 2012 on Natural Risks**, 24–28 September 2012, Potsdam, Germany.
- 1st European Earth System and Climate Modelling School**, 1–11 June 2012, Kos, Greece.
- DWD-HErZ Winterschool on Data Assimilation**, 13–17 February 2012, DWD (German Weather Service) Headquarters, Offenbach, Germany.
- German Symposium on Data Assimilation 2011**, 28–30 September 2011, DWD (German Weather Service) Headquarters, Offenbach, Germany.

## OTHER ACADEMIC ACTIVITIES

- Lecture “Data assimilation applications in atmospheric sciences” within GEOSIM spring school “Data assimilation and Introduction to statistical modelling of extreme values”, March 2014, Berlin.
- Lectures on data assimilation and inverse modeling for the Meteorology Master Seminar “Modelle für Wettervorhersage und Umwelt” (weather forecasting- and environment models), 2014, Meteorology Institute of Freie Universität Berlin.
- Referee for International Journal for Numerical Methods in Fluids (IJNMF), January 2016.
- Referee for Quarterly Journal of the Royal Meteorological Society (QJRMS), August 2015.
- Referee for Biogeosciences (BG) Journal (Copernicus Publications), September 2013.
- Attendance to 62nd Lindau Nobel Laureate Meeting (Physics), 1–6 July 2012, Lindau, Germany.

## FELLOWSHIPS

**Postdoctoral research scholarship**, 10/2015 – present, Collaborative Research Center “*Scaling Cascades in Complex Systems*”, Freie Universität Berlin, Berlin, Germany.

**Research scholarship**, 10/2014 – 09/2015, Collaborative Research Center “*Scaling Cascades in Complex Systems*”, Freie Universität Berlin, Berlin, Germany.

**Doctoral Fellowship**, 07/2014 – 09/2014, Freie Universität Berlin, Berlin, Germany.

**Helmholtz GEOSIM Fellowship**, 07/2011 – 06/2014, Freie Universität Berlin and Deutsches Geoforschungszentrum, Berlin, Germany.

**Fellowship for outstanding postgraduate students**, 02/2005 – 06/2006, National University of Colombia, Bogotá, Colombia.

**Loan-Scholarship for undergraduate students**, 08/1996 – 05/2000, National University of Colombia, Bogotá, Colombia. (Completely condoned due to high academical merits).

## LANGUAGES

**Spanish:** Mother tongue

**English:** Advanced level (Academic IELTS Overall Band Score 7.5  $\equiv$  C2 CERF level)

**German:** Upper intermediate level ( $\sim$  C1 CERF level)

Berlin, March 24, 2017