

CV SUMMARY

Marina Hirota, PhD

Assistant Professor

Department of Physics, Federal University of Santa Catarina, Florianópolis, Brazil

Phone: +55 48 3721 3744

E-mail: marina.hirota@ufsc.br

Webpage: <http://marinahirota.prof.ufsc.br>

Lattes: <http://buscatextual.cnpq.br/buscatextual/visualizacv.do?id=K4773561T3>

EDUCATION

2010	Center for Weather Forecasting and Climate Studies (CPTEC/INPE, Brazil)	Meteorology	Ph.D.
2004	University of Campinas (Brazil)	Computer Engineering	M.Sc.
2001	University of Campinas (Brazil)	Applied Mathematics	Bachelor

PROFESSIONAL HISTORY

2013 – Assistant professor at Federal University of Santa Catarina, Brazil.

2012 – 2013 Post-doctoral Fellow and Research Assistant. Center for Monitoring and Warnings of Natural Disasters, Brazil.

2010 – 2012 Post-doctoral Fellow. Department of Aquatic Ecology and Water Quality Management, Wageningen University and Research Center, The Netherlands.

2003 – 2004 Research assistant. Department of Computer Engineering and Industrial Automation, School of Electrical and Computer Engineering, University of Campinas, Brazil.

RESEARCH INTERESTS

- Tipping points, resilience and hysteresis of natural and socio-ecological systems;
- Feedback mechanisms and multi-scale interactions in tropical and subtropical systems;
- The role and strength of natural and human disturbances in driving biome shifts;
- Natural hazards and climatic extremes.

TEACHING EXPERIENCE

2014 – Lecturer of Basic Meteorology and Climatology, Meteorology Bachelor program of the Federal University of Santa Catarina, Brazil.

2013 – Lecturer of Newtonian Mechanics, Engineering Bachelor program of the Federal University of Santa Catarina, Brazil.

2007 – 2009 Teaching assistant of biosphere-atmosphere interactions, graduate program of the Center for Weather Prediction and Climate Studies, Brazil.

Relevant Training Workshops

2008 Workshop on *Advanced prediction of biome boundary shifts in regional and global dynamics vegetation models*, Yokohama, Japan.

2008 Workshop on *Functional Biogeography of Tropical Vegetation*, offered by the international alliance *Tropical Biomes in Transition*, Brasilia, Brazil.

MOST RELEVANT PUBLICATIONS

Verbesselt, J.; Umlauf, N.; Hirota, M.; Holmgren, M.; van Nes, E.H.; Herold, M.; Zeileis, A.; Scheffer, M. (2016) Remotely sensed resilience of tropical forests. *Nature Climate Change*, **6**: 1028-1031. DOI: 10.1038/nclimate3108.

Dantas, V.L.; Hirota, M.; Oliveira, R.S.; Pausas, J.G. (2016) Disturbance maintains alternative biome states. *Ecology Letters*, **19**(1): 12-19. DOI: 10.1111/ele.12537.

Debortoli, N.S.; Dubreuil, V.; Hirota, M.; Filho, S.R.; Lindoso, D.P.; Nabucet, J. (2016) Detecting deforestation impacts in Southern Amazonia rainfall using rain gauges. *International Journal of Climatology*. DOI: 10.1002/joc.4886.

Salazar, A.; Baldi, G.; Hirota, M.; Syktus, J.; McAlpine, C. (2015) Land use and land cover change impacts on the regional climate of non-Amazonian South America: a review. *Global and Planetary Change*, **128**: 103-119. DOI: 10.1016/j.gloplacha.2015.02.009.

Staal, A.; Dekker, S.C.; Hirota, Marina; Van Nes, E.H. (2015) Synergistic effects of drought and deforestation on the resilience of the south-eastern Amazon rainforest. *Ecological Complexity*, **22**: 65-75, DOI: 10.1016/j.ecocom.2015.01.003.

Van Nes, E.H.; Hirota, M.; Holmgren, M.; Scheffer, M. (2014) Tipping points in tropical tree cover: linking theory to data. *Global Change Biology*, **20**: 1016-1021. DOI: 10.1111/gbc.12398.

Holmgren, M.; Hirota, M.; Van Nes, E.H.; Scheffer, M. (2013). Effects of interannual climate variability on tropical tree cover. *Nature Climate Change*, **3**: 755-758. DOI: 10.1038/nclimate1906.

- Scheffer, M., Hirota, M.; Holmgren, M.; Van Nes, E.H.; Chapin, F.S. (2012). Thresholds for boreal biome transitions, *Proceedings of the National Academy of Sciences of the United States of America*, **109**(52): 21384-9. DOI: 10.1073/pnas.1219844110.
- Van Nes, E.H., Holmgren, M., Hirota, M., Scheffer, M. (2012). Response to Comment on “Global Resilience of Tropical Forest and Savanna to Critical Transitions”, *Science*, **336**: 541-541. DOI: 10.1126/science.1219711.
- Hirota M, Holmgren M, Van Nes EH, Scheffer M. (2011). Global resilience of tropical forest and savanna to critical transitions, *Science*, **334**: 232 – 235. DOI: 10.1126/science:1210657.
- Hirota M, Oyama MD, Nobre C. (2011). Concurrent climate impacts of tropical South America land-cover change, *Atmospheric Science Letters*, **12**: 261 – 267. DOI: 10.1002/asl.329.
- Hirota M, Nobre C, Oyama MD, Bustamante MMC. (2010). The climatic sensitivity of the forest, savanna and forest-savanna transition in tropical South America, *New Phytologist*, **187**: 707 – 719. DOI: 10.1111/j.1469-8137.2010.03352.x.

ONGOING RESEARCH GRANTS

2014 – 2018 Project “*Towards an understanding of tipping points in tropical South American biomes*”, funded by Microsoft/FAPESP research grant 13/50169-1.
URL: www.e-tribes.com.br.

ONGOING SUPERVISIONS

- 2016** – Supervising Msc dissertation of Lucas Peixoto: *Impact of invasive species under climate change conditions in Florianopolis, Brazil*, Department of Ecology, Federal University of Santa Catarina, Brazil.
- 2015** – Supervising Msc dissertation of Marcio Cure: *Inferring adaptive capacity: traditional knowledge related to climate change*, Department of Ecology, Federal University of Santa Catarina, Brazil.
- 2013** – Advising PhD thesis of Arie Staal: *Detecting critical transitions in the Amazon rainforest*. Wageningen University and Research Center, the Netherlands.

ACADEMIC QUANTITATIVE INDICATORS

Peer-review published articles: **14**; Book chapters: **1**; Full articles published in scientific meetings: **9**; Abstracts published in scientific meetings: **5**; International Conferences: **19**; International Workshops: **4**; Citations according to Google Scholar: **633**; Ad hoc reviewer for **8** journals including *The American Naturalist*, *New Phytologist*, *Nature Geoscience* and *Nature*.

Links to citation portals:

<http://scholar.google.com/citations?user=Riy6RUcAAAAJ&hl=pt-PT>

<http://www.researcherid.com/rid/E-6058-2012>