



GILBERTO CÂMARA SHORT CV – April 2013

EDUCATION

1. B.S. in Electronics Engineering, ITA, 1979.
2. MSc in Computer Science, INPE, 1982. Thesis: "Methods for Image Interpolation based on FIR Filter Design" (advisor - Prof Nelson Mascarenhas).
3. PhD in Computer Science, INPE, 1995. Dissertation: "Models, Languages and Architectures for Geographical Databases" (advisor - Prof. Marco Casanova).

WORK HISTORY

1. Researcher - INPE, Brazil's National Institute for Space Research) (1980-today).
2. Head of INPE's Image Processing Division (1991-1996).
3. Associate Director for Earth Observation at INPE (2001-2005).
4. General director of INPE (2005-2012).

HONORS

1. *Doctor honoris causa*, Geosciences Institute, Westfälische Wilhelms-Universität Münster, Alemanha (2011).
2. Chevalier de L'Ordre Nationale de Merite, França, 2012.
3. Senior Member, Association for Computing Machinery (ACM), 2012.
4. William T. Pecora Award, USGS/NASA, 2012.
5. Global Citizen Award, Global Spatial Data Infrastructure Association, 2012.

SELECTED PUBLICATIONS

1. Karine Ferreira, Gilberto Câmara, Miguel Monteiro, "An algebra for spatiotemporal data: from observations to events", *Transactions in GIS*, in press, 2013.
2. Thales Korting, Leila Fonseca, Gilberto Câmara, "GeoDMA - Geographic Data Mining Analyst: a framework for GIScience". *Computers and Geosciences*, in press, 2013.
3. Tiago Carneiro, Pedro Andrade, Gilberto Câmara, Miguel Monteiro, Rodrigo Pereira, "TerraME: an extensible toolbox for modelling nature-society interactions". *Environmental Modelling and Software*, in press, 2013.
4. Giovana Espindola, Ana Aguiar, Edzer Pebesma, Gilberto Câmara, Leila Fonseca, "Agricultural land use dynamics in the Brazilian Amazon based on remote sensing and census data", *Applied Geography*, 32(2):240-252, 2012.
5. Max Craglia, Mike Goodchild, Alessandro Annoni, Gilberto Camara, Michael Gould, Werner Kuhn, David Mark, Ian Masser, David Maguire, Steve Liang, Ed Parsons, "Next-Generation Digital Earth". *Int. Journal of Spatial Data Infrastructures Research*, 3:146-167, 2008.
6. Marcelino P.S. Silva, Gilberto Câmara, Isabel Escada, Ricardo Souza, "Remote Sensing Image Mining: Detecting Agents of Land Use Change in Tropical Forest Areas". *Int. Journal of Remote Sensing*, 29(16): 4803 – 4822, 2008.
7. Gilberto Câmara, Lúbia Vinhas, Karine Ferreira, et al.. "TerraLib: An open-source GIS library for large-scale environmental and socio-economic



- applications". In B. Hall (ed), Open Source Approaches to Spatial Data Handling. Berlin: Springer, 2008.
8. Flávia Feitosa, Gilberto Câmara, Antônio Miguel Monteiro, Thomas Koschitzki, Marcelino Santos Silva, "Global and Local Spatial Indices of Urban Segregation", *Int Journal of Geographical Information Science*, 21(3):299-323, 2007.
 9. Ana Aguiar, Gilberto Câmara, Maria Isabel Escada, "Spatial statistical analysis of land-use determinants in the Brazilian Amazon: exploring intra-regional heterogeneity". *Ecological Modelling*, 209(1-2):169–188, 2007.
 10. Gilberto Câmara, Frederico Fonseca, "Information policies and open source software in developing countries". *Journal of the American Society for Information Science and Technology*, 58(1):121–132, 2007
 11. Renato Assunção, Marcos Neves, Gilberto Câmara, Corina da Costa Freitas, "Efficient regionalisation techniques for socio-economic geographical units using minimum spanning trees". *Int. Journal of Geographical Information Science*, vol. 20(7): 797-812, 2006.
 12. Giovana Espíndola, Gilberto Câmara, Ilka Reis, Leonardo Bins, Miguel Monteiro, "Parameter Selection for Region-Growing Image Segmentation Algorithms using Spatial Autocorrelation". *Int Journal of Remote Sensing*, 27(14/20): 3035–3040, 2006.
 13. Gilberto Câmara, Max Egenhofer, Fred Fonseca, Antonio Miguel Monteiro. "What's in An Image?" In: D. Montello (ed), Spatial Information Theory: COSIT'01, Conference on Spatial Information Theory, Morro Bay, EUA, 2001. Lecture Notes in Computer Science, vol. 2205, pp. 474-488. Berlin, Springer-Verlag, 2001 (38 citations – Google Scholar, 29.03.2013)
 14. Fred Fonseca, Max Egenhofer, Peggy Agouris, Gilberto Câmara, "Using ontologies for integrated geographic information systems", *Transactions in GIS*, 6 (3), 231-257, 2002 (409 citations – Google Scholar, 29.03.2013).
 15. Gilberto Câmara, Ricardo Souza, Ubirajara Freitas, Juan Garrido, "SPRING: Integrating remote sensing and GIS with object-oriented data modelling". *Computers and Graphics*, 15(6): 13-22, July 1996 (787 citations – Google Scholar, 29.03.2013).

ONGOING RESEARCH PROJECTS

1. **"Land use change in Amazonia: institutional analysis and modeling at multiple temporal and spatial scales" (2009-2012).**
Agency: FAPESP (R\$ 1.870.000). Período: Mar/2010 a Fev/2014.
Goal: To understand and to model deforestation in Amazonia.
Rôle in project: Principal investigator.
2. **TerraME: Multiscale modelling of nature-society interactions.**
Agency: CNPq (R\$ 262.700). Período: Jan/2011 a Jan/2014.
Goal: R&D in software for spatial models of nature-society interactions.
Rôle in project: Principal investigator.



3. REDD-PAC: REDD+ Policy Assessment Center

Agency: Germany International Climate Initiative (EU € 669,194.00).

Período: Nov/2011 a Out/2015.

Goal: To model future scenarios of sustainable development in Brazil.

Rôle in project: Principal investigator of Brazilian team (partners: INPE, IIASA, IPEA, UNEP/WCMC, COMIFAC).

ONGOING PHD STUDENTS

1. Victor Werner Maus, "Modelling Land Use Change with Remote Sensing Time Series Analysis". PhD in Earth System Science, INPE.

ONGOING MsC STUDENTS

2. Luiz Gustavo Veras, "Quality metrics for land use change models". MsC in Computer Science, INPE.
3. André Chiarelli, "Revisiting the limits to growth on a spatial perspective". MsC in Computer Science, INPE.

PRODUCTIVITY INDICATORS

CNPq Research Scholarship	Researcher level 1C
Papers in indexed scientific journals	55
Papers in congresses with referees	73
Edited books	6
Book chapters	38
Citations (Google Scholar - Mar/2013)	5113
H-index (Google Scholar - Mar/2013)	31
MsC thesis advised	25
PhD dissertations advised	22

GOOGLE SCHOLAR PAGE

<http://scholar.google.com/citations?user=0b8sNIIAAAJ&hl=en>

VITA

Dr. Gilberto Câmara (born 1956) is a Brazilian researcher in Geoinformatics, Spatial Databases, and Environmental Modelling at the Image Processing Division of Brazil's National Institute for Space Research (INPE). He is internationally recognized for promoting free access for geospatial data and for setting up an efficient satellite monitoring of the Brazilian Amazon rainforest.

Gilberto was head of INPE's Image Processing Division from 1991 to 1995, INPE's Assistant Director for Earth Observation from October 2001 to December 2005 and INPE's director general from December 2005 to May 2012. During his term in as INPE's director general, the institute's budget grew from US\$ 90 million in 2004 to US\$ 250 million in 2010. He established a free and open access policy for INPE's data and products. As a result, more than 2 million satellite images have been distributed freely between 2005 and 2012. Under his guidance, INPE's team achieved big advances in land change monitoring using remote sensing images, leading to a major decrease in the deforestation in Amazonia. This effort was supported by total information transparency, changing the way Brazil and the World looked at Amazonia. The leading scientific journal *Nature* called the reduction in deforestation in Amazonia to be "*the biggest environmental success story in decades*".

Gilberto is very active on the global effort for making Earth Observation data openly accessible. He has been involved in GEO since its inception and has led Brazil to be one of the most forward-looking countries in GEO as regards data policy. Gilberto conceived the "CBERS for Africa" initiative that will allow images from the CBERS remote sensing satellites to be distributed openly for African users. As recognition for his efforts in data policy, he was invited to be a member of the Scientific Advisory Board of Creative Commons.

Gilberto has also had an accomplished career as a researcher. He is the leader of INPE's team on Geoinformatics, which has become internationally recognized for developing open source software that contains state-of-the-art research. Gilberto has advised 23 PhD dissertations and 25 Master thesis and published more than 150 scholarly papers that have been cited more than 5000 times. He serves on the editorial board of the journals *Anthropocene*, *Earth Science Informatics*, *Journal of Spatial Information Science and Computers*, *Environment and Urban Systems*. He was a member of the Scientific Steering Committee of Global Land Project from 2006 to 2011.

As recognition for his work, he was inducted as a *Doctor honoris causa* from the University of Münster (Germany) and as a Chevalier (Knight) of the Ordre National du Mérite of France. He received the Global Citizen Award of the Global Spatial Data Infrastructure Association. He is also a Fellow of the Faculty of Geoinformation Science and Earth Observation (ITC) in the Netherlands and a Senior Member of the Association for Computing Machinery (ACM).