

CURRICULUM VITAE

PERSONAL INFORMATION

NAME **Riccardo VALENTINI**

DATE AND PLACE OF BIRTH 11 December 1959, Italy

NATIONALITY Italian

PRESENT POSITION Full Professor at University of Tuscia

OFFICE ADDRESS Department of Forest Science and Environment
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UNIVERSITY EDUCATION 10/1978 – 04/1985 Laurea in Physics (curriculum Biophysics), University of Rome

EMPLOYMENT RECORD 09/1985 – 09/1986: Military Service in Aeronautics
10/1986 – 10/1987: Temporary Scientist at University of Tuscia
11/1987 – 10/2000: Researcher at University of Tuscia, Faculty of Agriculture
10/1990 – 12/1990: Visiting scientist at University of Utah, USA
01/1991 – 07/1991: Visiting scientist at the Carnegie Institution of Washington, Dep. of Plant Biology, USA
06/1993 – 09/1993: Visiting Scientist at the EC Joint Research Centre, Ispra, Italy
10/1995 – 10/1996: Professor of Forest Biometry and Inventories at University of Sassari, Faculty of Agriculture, Italy
10/1996 – 10/1997: Professor of Meteorology and Climatology at University of Tuscia, Faculty of Environmental Sciences
10/2000 – present: Professor of Forest Ecology and Remote Sensing, University of Tuscia, Italy
08/2002 – 09/2002: Visiting Professor University of Berkeley, California, USA
11/2002 – 2008: Director of the Department of Forest Sciences and Environment
2007 – present: Director of the Division "Impacts on Agriculture, Forest and Natural Ecosystems" (IAFENT) of the Euro-mediterranean Center for Climate Change (CMCC)

FELLOWSHIPS, AWARDS AND HONOURS 1983: Award for young scientist from the Pure and Applied Society for Biophysics
1990: Fellowship from the Italian National Research Council
1996: Member of the Scientific steering Committee of the IGBP – BAHC core project
1996,1997,1998: Convener of the session "Surface Fluxes" of the European Geophysical Society
1997: Co-principal investigator of the NASA project FLUXNET, a global network of carbon, water and energy fluxes over terrestrial ecosystems.
1997: Coordinator of the EC Environment and Climate (ENRICH) programme EURASIA-NET, A contribution to the development of a joint Europe Asia collaboration in understanding carbon and water exchanges of terrestrial ecosystems.
1998: Member of the EU delegation for Transatlantic Science and Technology Cooperation.
1998: Member of the Advisory board of the Dahlem Conference "Integrating Hydrology, Ecosystem Dynamics and Biogeochemistry in complex landscapes".
1999: Coordinator of the EU programme CARBOEUROFLUX, An investigation on

carbon and energy exchanges of terrestrial ecosystems in Europe EVK2-CT1999-00032.

1999: Coordinator of the EC programme CARBODATA, Carbon balance estimates and resource management support with data from project networks implemented at European continental scale. EVK2-CT1999-00044.

1999: Coordinating Lead Author of the chapter "Methods" of the IPCC Special Report on "Land use change and forestry".

1999: Task leader of the IGBP – GCTE core project 1.3.2: Ecological controls on biosphere – atmosphere CO₂ and H₂O fluxes

1999: Member of the Editorial Board of the journal "Global Change Biology"

1999: Member of the Italian Governmental delegation for UNFCCC negotiations in Den Haag (COP6)

2000: Chairman of the CARBOEUROPE cluster of EU projects dealing with the Carbon balance of Europe.

2000: Member of the Italian Governmental delegation for UNFCCC negotiations in Bonn (COP6bis)

2001: Member of the Scientific Steering Committee of Terrestrial Carbon Observation System (TCOS)

2001: Fellow of the Italian Academy of Forest Science

2001: Member of the Italian Governmental delegation for UNFCCC negotiations in Marrakesh (COP7)

2002: Coordinator of the EC project "CarboEurope GHG concerted action" aiming to understand and quantify the European budget of greenhouse gases.

2002: Member of the Italian Governmental delegation for UNFCCC negotiations in Delhi (COP8)

2002: Member of the Editorial Board of the journal Tree Physiology.

2002: Member of the Scientific Steering Committee of the IGBP-HDP-WCRP Global Carbon Project (GCP).

2002: Member of the Advisory Board of the Centre for Terrestrial Carbon Dynamics (Sheffield, UK)

2002: 2005 Member of the Scientific Committee of Biogeochemistry section of the European Geophysical Society

2002: Member of the Advisory Board of the Max Plank Institute of Biogeochemistry (Jena, Germany)

2002: Chairman of the Italian IGBP committee for Global Change

2003: Chairman of the Committee of Science and Technology of UNCCD

2004: Norbert Gerbier-Mumm International award 2004 for the paper "Environmental controls over carbon dioxide and water vapour exchange of terrestrial vegetation"

2005: Member "Ex Officio" of the Bureau of the UNCCD convention

2005: Chairman of Terrestrial Carbon Observation panel of GTOS

2006: Zayed International Prize for the Environment as member of the Millennium Ecosystem Assessment Board.

2006: Coordinator of the EU-Project CARBOAFRICA

2006: Laurea Honoris Causa Faculté Universitaire des Sciences Agronomiques de Gembloux, Belgium

2007: Nobel Prize for Peace as member of the IPCC board.

2007: Director of the Division IAFENT of the CMCC

2008: Member of the Biogeoscience Committee of the European Research Council

2009 –Chairman of the Global Terrestrial Observation System Programme, sponsored by FAO/UNESCO/UNEP/ICSU/WMO

2009: Award of the European Research Council Senior Advanced Grant for the project AFRICA GHG

2010: Member of the editorial board of the journal Earth System Dynamics

2010- Coordinator of the EU project CLIMAFRICA

2010 Member of Aurelio Peccei Foundation – Club di Roma

2011- Coordinator of the EU project GEOCARBON

SUMMARY OF ACHIEVEMENTS Riccardo Valentini has contributed to advance understanding of forest science and its role in the society in several ways.

His main research interest concerned the interaction between forest and environmental processes from the level of plant physiology to whole ecosystem, large scale and regional assessment and policy implications. Among the various scientific achievements, one of his most remarkable was the contribution to the recognition of forest ecosystems as an important component of the global carbon cycle.

Riccardo Valentini led a European project (EUROFLUX) aimed at understanding the role of European forests in the carbon cycle. As a result of this project, the first paper combining all of the observation on carbon budget of the European forests has been published in "Nature". The paper awarded the most cited paper in ecology in 2003 and today scores more than 680 citations. Later on, under the support of NASA, he coordinated a global network of flux towers placed in several ecosystem of the world (FLUXNET). Today FLUXNET counts more than 400 flux towers placed in North America, South America, Europe, Australia, China, Japan, Africa in different biomes including: forests, crops, grasslands, savannahs, wetlands etc.

The recognition of forests as important carbon sinks was the basis of the IPCC (2000) "Land Use and Land Use Changes and Forestry" Report, where Prof. Riccardo Valentini was Coordinating Lead Author. In the following years he has been consulting and chief negotiator for the Italian Ministry of Environment at the UNFCCC Conference of the Parties (COP). Remarkably, he negotiated on behalf of EU in Milan COP9 the final decision of inclusion of afforestation and reforestation projects in the Kyoto Protocol /Clean Development Mechanism.

In parallel, he was also appointed chair of the Committee of Science and Technology in the United Nation Convention to combat Desertification (UNCCD). In his role, he promoted several initiatives to raise the interest of UNCCD Parties to forestry sector. Some of the remarkable initiatives were: the negotiation of a position paper on the role of forests in the synergies among the Rio Conventions (Viterbo conference) and the role of women in combating desertification through reforestation and sustainable forest management (Beijing conference).

He is currently supporting the Italian Government in several national and international initiatives concerning forests and the European Commission. He is also chairman of the Global Terrestrial Observation Programme, sponsored by FAO, WMO, UNESCO, ICSU and UNEP.

PUBLICATIONS In total 170 publications, of which 10 in highly cited journals (such as Nature (4), Science (4) and Nature Geoscience (2)). Prof. Valentini's papers has been cited
(PEER REVIEWED 4875 times since 1996. The most cited paper of Prof. Valentini is the publication
INTERNATIONAL (Valentini *et al.* 2000, Nature) which has been cited 680 times until today. Prof.
JOURNALS) Valentini h factor is 31 (since 1996), according to Scopus, excluding self citations.

The following list of papers represents a snapshot of the publications of the last 10 years (only publications where Prof. Valentini has a leading role both as first author and/or senior author, being the leader of the group and/or the leader of the research consortium). Publications has been selected according to the maximum number of citations in descending order.

1. **Valentini, R.**, G. Matteucci, A. J. Dolman, E.-D. Schulze, C. Rebmann, E. J. Moors, A. Granier, P. Gross, N. O. Jensen, K. Pilegaard, A. Lindroth, A. Grelle, C. Bernhofer, T. Grünwald, M. Aubinet, R. Ceulemans, A. S. Kowalski, T. Vesala, Ü. Rannik, P. Berbigier, D. Loustau, J. Guðmundsson, H. Thorgeirsson, A. Ibrom, K. Morgenstern, R. Clement, J. Moncrieff, L. Montagnani, S. Minerbi and P. G. Jarvis (2000). "Respiration as the main determinant of European forests carbon balance." Nature 404: 861-865. (680)
2. **Valentini, R.** (2001). "Energy Flux and Primary Production. Frontiers of Life". D. Baltimore, R. Dulbecco, F. Jacob and R. Montalcini-Levi. New York,

Academic Press. 4: 421-433.

3. Ciais, P., M. Reichstein, N. Viovy, A. Granier, J. Ogee, V. Allard, M. Aubinet, N. Buchmann, C. Bernhofer, A. Carrara, F. Chevallier, N. D. Noblet, A. Friend, P. Friedlingstein, T. Grunwald, B. Heinesch, P. Keronen, A. Knohl, G. Krinner, D. Loustau, G. Manca, G. Matteucci, F. Miglietta, J. M. Ourcival, D. Papale, K. Pilegaard, S. Rambal, G. Seufert, J. F. Soussana, M. J. Sanz, E. D. Schulze, T. Vesala and **R. Valentini** (2005). "Europe-wide reduction in primary productivity caused by the heat and drought in 2003." *Nature* 437: 529-533. (174)
4. Rey, A., E. Pegoraro, V. Tedeschi, I. De Parri, P. G. Jarvis and **R. Valentini** (2002). "Annual variation in soil respiration and its components in a coppice oak forest in Central Italy." *Global Change Biology* 8(9): 851-866 (99)
5. Reichstein, M., J. D. Tenhunen, O. Rouspard, J. Ourcival, S. Rambal, F. Miglietta, A. Peressotti, M. Pecchiari, G. Tirone and **R. Valentini** (2002). "Severe drought effects on ecosystem CO₂ and H₂O fluxes in three Mediterranean evergreen ecosystems: revision of current hypotheses ?" *Global Change Biology* 8: 999-1017 (79)
6. Reichstein, M., J. D. Tenhunen, O. Rouspard, J. Ourcival, S. Rambal, S. Dore and **R. Valentini** (2002). "Ecosystem Respiration in two Mediterranean evergreen holm oak forests: Drought Effects and Decomposition Dynamics." *Functional Ecology* 16: 27-39. (61)
7. Papale, D. and **R. Valentini** (2003). "A new assessment of European forests carbon exchanges by eddy fluxes and artificial neural network spatialization." *Global Change Biology* 9: 525 -535. (50)
8. Reichstein, M., T. Katterer, O. Andren, P. Ciais, E.-D. Schulze, W. Cramer, D. Papale and **R. Valentini** (2005). "Temperature sensitivity of decomposition in relation to soil organic matter pools: critique and outlook." *Biogeosciences* 2: 317-321 (26)
9. **Valentini, R.**, S. Dore, G. Marchi, D. Mollicone, M. Panfyorov, C. Rebmann, O. Kolle and E.-D. Schulze (2000). "Carbon and water exchanges of two contrasting central Siberian landscape types: regenerating forest and bog." *Functional Ecology* 14: 87-96. (22)
10. Jarvis, P., A. Rey, C. Petsikos, L. Wingate, M. Rayment, J. S. Pereira, J. David, F. Miglietta, M. Borghetti, G. Manca and **R. Valentini** (2007). "Drying and wetting of Mediterranean soils stimulates decomposition and carbon dioxide emission: the "Birch effect"." *Tree Physiology* 27: 929-940 (14)
11. Dolman, A. J., E.-D. Schulze and **R. Valentini** (2003). "Analyzing carbon flux measurements." *Science* 301: 916-917 (8)
12. Schulze, E.-D., D. Mollicone, F. Achard, G. Matteucci, S. Federici, H. G. Eva and **R. Valentini** (2003). "Making deforestation pay under the Kyoto Protocol?" *Science* 299: 1669.

ADDITIONAL PUBLICATIONS

(WHERE PROF. VALENTINI HAS CONTRIBUTED SIGNIFICANTLY AS JOINT AUTHOR IN HIGH IMPACT JOURNAL)

13. Ciais, P., M. J. Schelhaas, S. Zaehle, S. L. Piao, A. Cescatti, J. Liski, S. Luyssaert, G. Le-Maire, E. D. Schulze, O. Bouriaud, A. Freibauer, **R. Valentini** and G. J. Nabuurs (2008). "Carbon accumulation in European forests." *Nature Geosci* 1(7): 425-429
14. Magnani, F., M. Mencuccini, M. Borghetti, P. Berbigier, F. Berninger, S. Delzon, A. Grelle, P. Hari, P. G. Jarvis, P. Kolari, A. S. Kowalski, H. Lankreijer, B. E. Law, A. Lindroth, D. Loustau, G. Manca, J. B. Moncrieff, M. Rayment, V. Tedeschi, **R. Valentini** and J. Grace (2007). "The human footprint in the carbon cycle of temperate and boreal forests." *Nature* 447(7146): 849-851.
15. Janssens, I. A., A. Freibauer, P. Ciais, P. Smith, G.-J. Nabuurs, G. Folberth, B. Schlamadinger, R. W. A. Hutjes, R. Ceulemans, E.-D. Schulze, R. Valentini and A. J. Dolman (2003). "Europe's Terrestrial Biosphere Absorbs 7 to 12% of European Anthropogenic CO₂ Emissions." *Science*(300): 1538-1542.
16. Steffen, W., I. Noble, J. Canadell, M. Apps, E.-D. Schulze, P. G. Jarvis, D. D. Baldocchi, P. Ciais, W. Cramer, J. Ehleringer, G. Farquhar, C. Field, A. Ghazi, R. Gifford, M. Heimann, R. Houghton, P. Kabat, C. Korner, E. Lambin, S. Linder, J. Lloyd, H. Mooney, D. Murdiyarso, W. Post, C. Prentice, M. Raupach,

- I. D. Schimel, A. Shvidenko and **R. Valentini** (1998). "The terrestrial carbon cycle: implications for the Kyoto protocol." Science 280: 1393-1394.
17. Bombelli A., M. Henry, S. Castaldi, S. Adu-Bredu, A. Arneeth, A. de Grandcourt, E. Grieco, W. L. Kutsch, V. Lehsten, A. Rasile, M. Reichstein, K. Tansey, U. Weber, and **R. Valentini**, 2009. The Sub-Saharan Africa carbon balance, an overview. Biogeosciences Discussions 6, 2085-2123.

Monographs

1. Dolman, A. J., A. Freibauer and **R. Valentini** (eds). (2008) "The continental scale greenhouse gas balance of Europe". New York, Springer.
2. Valentini, R. (ed.). (2003) "Fluxes of carbon, water and energy of European forests". Berlin, Springer Verlag.
3. **Valentini, R.** (2001). "Energy Flux and Primary Production". Frontiers of Life. D. Baltimore, R. Dulbecco, F. Jacob and R. Montalcini-Levi. New York, Academic Press
4. *Chapters*
5. Baldocchi, D. and **R. Valentini** (2004). "Geographic and Temporal Variation of Carbon Exchange by Ecosystems and Their Sensitivity to Environmental Perturbations". The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World. C. B. Field and M. Raupach. USA, Island Press. 62: 587.
6. Gruber, N., P. Friedlingstein, C. B. Field, **R. Valentini**, M. Heimann, J. E. Richey, P. R. Lankao, E.-D. Schulze and C. A. Chen (2004). "The Vulnerability of the Carbon Cycle in the 21st Century: An Assessment of Carbon-Climate-Human Interactions". The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World. C. B. Field and M. Raupach. USA, Island Press. **62**: 568.
7. Papale, D. and **R. Valentini** (2004). "Spatial and temporal assessment of biospheric carbon fluxes at a continental scale by neural network optimization". Forests at the Land-Atmosphere Interface. M. Mencuccini, J. Grace, J. Moncrieff and J. McNaughton. Wallingford, UK, Cabi International: 281.
8. Hymus, G. J. and **R. Valentini** (2006). "Terrestrial Vegetation as a Carbon Dioxide Sink". Greenhouse Gas Sinks. D. S. Reay, N. Hewitt, J. Grace and K. A. Smith, CABI.

RESEARCH EXPEDITIONS 1994: Forest tree distribution in western Himalaya, Jumla, Nepal, funded by LED University of Tuscia;
 1996: Boreal forest and Siberian carbon cycle, Krasnoyarsk, Siberia, EU funded project EURASIA-NET
 1999: CO₂ and VOC measurements in Amazonia, Manaus, Brasil, EU funded project LBA-EUSTACH
 2005: Dust emission measurement in Gobi desert, Alashan, China, funded by Italian Ministry of Environment;
 2008: Carbon fluxes of tropical rainforest, Ankasa, Ghana, EU funded project CARBOAFRICA.