

## Curriculum Vitae

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**June 23, 2009**

**Name:** IGNACIO RODRÍGUEZ-ITURBE

**Date of Birth:** March 8, 1942

**Title:** James S. McDonnell Distinguished University Professor  
and Professor of Civil and Environmental Engineering,  
Princeton University

**Degrees:**  
C.E. Universidad del Zulia, 1963  
M.S., California Institute of Technology, 1965  
Ph.D., Colorado State University, 1967

### **Academic and Professional Interests**

Analysis, synthesis and sampling of hydrologic processes.  
Hydrogeomorphology, Hydroclimatology, Ecohydrology.

### **Academic Positions**

Associate Professor, Civil Engineering Department, Universidad del Zulia,  
October 1967-October 1969.

Associate Researcher, Instituto Venezolano de Investigaciones Científicas  
(IVIC), Caracas, October 1969 - August 1971.

Associate Professor, Civil Engineering Department, Massachusetts Institute of  
Technology, September 1971 - October 1973.

Associate Head, Water Resources Division, Civil Engineering Department,  
Massachusetts Institute of Technology, October 1973 - June 1975.

Professor of Engineering, Universidad Simón Bolívar, Caracas, June 1975 -  
July 1995.

Head, Graduate Program in Hydrology and Water Resources, Universidad  
Simón Bolívar, June 1975 - August 1977.

Dean of Research, Universidad Simón Bolívar, June 1975 - May 1979.

Dean of Graduate Studies, Universidad Simón Bolívar, Caracas, September  
1980 - May 1981.

Professor, Instituto Internacional de Estudios Avanzados (IDEA), Caracas, May 1987 - July 1993.

Visiting Professor and Senior Lecturer (part-time residence), Civil Engineering Department, Massachusetts Institute of Technology, Cambridge, Massachusetts, September 1987 - July 1993.

Endowed Professor of Civil and Environmental Engineering, Iowa Institute of Hydraulic Research, University of Iowa, Iowa City, Iowa, August 1989 - May 1991.

R. P. Gregory Chair Professor and Head of the Civil Engineering Department, Texas A&M University, College Station, Texas, August 1993 - August 1997.

Distinguished Professor and Holder of the R. P. Gregory Chair in Civil Engineering, September 1997 - January 31, 1999.

Director, Center for Energy and Environmental Studies, Princeton University, July 1, 1999 – June 2002

Professor, Department of Civil and Environmental Engineering, and Princeton Environmental Institute, Princeton University, Princeton, New Jersey, February 1, 1999 –

Theodora Shelton Pitney Professor of Environmental Sciences, Princeton University, 2001-2006

James S. McDonnell Distinguished University Professor of Civil and Environmental Engineering, Princeton University, 2006 - present

### **Representative Academic Responsibilities**

Member, Directory, National Council for Scientific and Technological Research (CONICIT), Venezuela, 1968.

Head, Committee for Technological Research, Venezuelan Institute for Scientific Research (IVIC), 1968-1970.

Coordinator, Project for the Study of Latin America (ESAL), Universidad Simón Bolívar, Caracas, 1976-1978.

Member, Engineering Commission of the National Council for Scientific and Technological Research (CONICIT), Venezuela, 1976-1980.

Member, Earth Sciences Commission of the National Council for Scientific and Technological Research (CONICIT), Venezuela, 1978-1980.

Coordinator, Earth Sciences Commission of the National Council for Scientific and Technological Research (CONICIT), Venezuela, 1981-1983.

Member, National Council for Scientific and Technological Research (CONICIT), Venezuela, 1981-1984.

Member, Executive Committee, Instituto Internacional de Estudios Avanzados (IDEA), Caracas, 1981 - 1990.

Member, Committee on Science and Technology in Developing Countries (COSTED), International Council of Scientific Unions (ICSU), 1981-1984.

Faculty Representative for the University Council, Universidad Simón Bolívar, Caracas, 1982-1984.

Member, Committee of the Scientific Prize “Lorenzo Mendoza Fleury” (Premio Polar), Caracas, 1986-1987.

Member, Advisory Committee, Center for Research and Technological Support of the Venezuelan Petroleum Industry (INTEVEP), Caracas, 1989 - 1990.

Member, Membership Committee on Engineering Sciences, Third World Academy of Sciences (ACAL), 1991-1994.

Member, Advisory Council, Engineering Research and Operations Department, Princeton University, Princeton, New Jersey, 1991 - 1994.

Member, Regional Advisory Committee (RAC) for Latin America, American Geophysical Union, Washington, DC, November 1992 - June 1994.

Member, Water Science and Technology Board, National Research Council, July 1, 1994 -June 30, 1997.

Member, Committee on Statistics in the Physical Sciences (CSPS), Bernoulli Society, 1995 -1997.

Member, Corporation Visiting Committee for the Department of Civil and Environmental Engineering, M.I.T., Cambridge, Massachusetts, 1996 -2004.

Member, U.S. National Committee for the International Institute for Applied System Analysis (IIASA), 2004-2006.

### **Awards and Distinctions**

Prize “Máxima Calificación.” Graduating Prize of the Engineering Class of

1963, Universidad del Zulia, Venezuela, 1963.

Research Prize, Venezuelan Society of Hydraulic Engineers, Caracas, 1968.

Plaque for Outstanding Teaching, Civil Engineering School, Universidad del Zulia, 1969.

“Conspicuously Effective Teaching Award,” Civil Engineering Department, Massachusetts Institute of Technology, September 1974.

Huber Research Prize, American Society for Civil Engineers, November 1975.

Hydrologic Sciences Award, American Geophysical Union, December 1975.

James B. Macelwane Award, American Geophysical Union, December 1977.

Medal “Orden 27 de June” for Merits in Education, Government of Venezuela, 1977.

Fellow, American Geophysical Union, 1977.

Vice President, International Commission on Water Resources Systems, International Association of Hydrological Sciences, 1980-1983.

Honorary President, 1st National Congress in Hydroclimatology, Caracas, 1983.

First Vice President, International Association of Hydrological Sciences (IAHS), 1983-1986.

Member, Latin American Academy of Sciences, 1983.

Prize “Francisco J. Torrealba,” awarded by the Universidad Simón Bolívar, for outstanding research accomplishments, Caracas, Venezuela, December 1985.

National Prize for best research paper in all branches of Engineering, National Council for Sciences and Technological Research (CONICIT), Caracas, 1987.

Member, United States National Academy of Engineering, 1988.

Member, Third World Academy of Sciences (TWAS), 1988.

Order “Andrés Bello,” 1st Class, Venezuela, 1988.

Chester K. Kisiel, Memorial Lecturer, University of Arizona, 1991.

National Science Prize, National Council for Sciences and Technological Research (CONICIT), Venezuela 1991.

Medal Dr. Antonio Borjas, Distinguished Alumnus Award, Universidad del Zulia, Venezuela, 1991.

Academic Medal of the University of Florence, Italy, October 1991.

Honorary Doctor's Degree, University of Genoa, Italy, June 1992.

Fellow, American Meteorological Society, 1992.

Academic Medal of the University of Padua, Italy, October 1992.

Colorado State University, 1994 Honor Alumnus Award.

Premio Mexico de Ciencia y Tecnologia 1994, Republica de Mexico, September 1994.

First Water Resources Engineering Distinguished Lecturer, Colorado State University, May 1994.

Robert E. Horton Lecturer in Hydrology, American Meteorological Society, January 1995.

Robert E. Horton Medal, American Geophysical Union, May 1998.

National Engineering Research Prize. Venezuela, December 1998.

Order Francisco Miranda (1<sup>st</sup> Class) for academic merits, Government of Venezuela, December 1998.

Moore Lecturer, University of Virginia, April 1999.

Member, The Water Academy, Uppsala, Sweden, 1999.

Walter Langbein Lecturer, American Geophysical Union, (Hydrology Section) May 2000.

Evnin Lecturer, Princeton University, Spring 2000.

Ven Te Chow Award for lifetime achievements in the field of hydrology. Awarded by the Environmental Water Resources Institute/American Society of Civil Engineers, May 2001.

Hydrology Days Award 2002, Colorado State University, April 2002.

Stockholm Water Prize, 2002.

Highly Cited Researcher, Institute of Scientific Information (ISI), 2003.

Real Academia de Ciencias Exactas, Fisicas y Naturales, Academico Correspondiente Extranjero, Spain, February 2003.

Distinguished Lecturer, Texas A & M University College of Engineering, Spring 2003.

Honorary Doctor's Degree, Universidad del Zulia, Venezuela, October 2003.

Miller Research Professor, University of California, Berkeley, Winter 2004.

Academia de Ingenieria de Mexico, Academico Correspondiente Extranjero, April 2004.

Istituto Veneto di Scienze, Lettere ed Arti, Foreign Member, June 2004.

Honorary Emeritus Professor, Universidad Simon Bolivar, Caracas, 2005.

Honorary Member, National Academy of Engineering of Venezuela, 2006.

Blusa del Agua, awarded by the Tribunal de las Aguas, Valencia, Spain, February 2007.

Honorary Member, Colegio Ingenieros, Edo. Zulia, Venezuela, 2008.

Medal Hermagoras Chavez, Government of Edo. Zulia, Venezuela, 2008.

Honorary Professor, School of Engineering, Universidad del Zulia, Venezuela, 2008.

Member, Pontifical Academy of Sciences, Vatican City, 2008.

Edward O. Wilson Biodiversity Technology Pioneer Award, American Computer Museum and Montana State University, Inaugural Awards, April 2009.

William Bowie Medal, American Geophysical Union, 2009.

### **Representative Scientific Committees**

Member, Working Group in Stochastic Hydrology of the International

Association for Scientific Hydrology, 1975-1978.

Member, Task Group of Stochastic Hydraulics of the International Association of Hydraulic Research, 1977-1980.

Member, Committee on Stochastic Hydrology, American Geophysical Union, 1977-1980.

Member, Network Design Committee, Hydrology Section, American Geophysical Union, 1977-1980.

Member, Technical Commission for Earth and Sea Science, National Council for Scientific and Technological Research (CONICIT), Venezuela, 1977-1980.

Member, Committee on System Analysis Applied to Water Resources Conference (Naciones Unidas), Mar del Plata, Argentina, 1978.

Member, Macelwane Award Subcommittee, Committee of Fellows of the American Geophysical Union, 1980-1982.

Member, International Program Committee, IFAC Symposium on Water and Related Land Resources Systems, sponsored by the World Environment and Resources Council, AGU and Water Resources Association, Cleveland, May 1980.

International Advisor, Graduate Course in General and Subterranean Hydrology, Buenos Aires, Argentina, 1980.

Member, International Program Committee, Symposium on Real Time Operation of Hydrosystems; University of Waterloo, Ontario, Canada, June 1981.

Member, Organizing Committee, International Symposium on Rainfall-Runoff Modeling, Mississippi State University, May 1981.

Fellows Subcommittee, Hydrology Section of the American Geophysical Union, 1981.

Chairman, Working Group on Scale Problems in Hydrology, International Association of Hydrological Sciences, 1980 - 1990.

Member, Scientific Committee, International Course in Water Resources, Perugia, Italia, July, 1984 - 1990.

Member, Committee for Developing Countries, International Union of Geodesy and Geophysics, 1984 - 1988.

Member, Executive Committee, Hydrology Section, American Geophysical Union, 1984-1988.

Member, International Programme Committee of the IFAC Conference on System Analysis Applied to Water and Related Land Resources, 1985.

Member, Planning Committee, Fourth International Symposium in Hydrology, Fort Collins, Colorado, July 1985.

Horton Medal Committee, American Geophysical Union, Hydrology Section, 1982-1984; 1986-1988.

Member, Advisory Committee, International Symposium on Flood Frequency and Risk Analyses, Baton Rouge, Louisiana, May 1986.

Member, Committee for the Scientific Prize “Lorenzo Mendoza Fleury” (Premio Polar), 1986-1987.

Member, U.S. National Research Council Planning Group for the Establishment of a Panel to Assess the Status and Needs of the Science of Hydrology, 1987.

Member, Steering Committee, International Meetings on Statistical Climatology, 1987 - 1990.

Member, Committee on Opportunities in the Hydrologic Sciences, U.S. National Research Council, 1987-1989.

Member, Scientific Committee, Summer School on Environmental Dynamics, Istituto Veneto di Scienze, Lettere ed Arti, Venecia, Italia, 1988 - 1998.

Member, Working Group on Terrestrial Ecosystems in Global Change, U.S. National Research Council, 1990-1991.

Member, Advisory Board, Center for Global and Regional Environmental Research, University of Iowa, 1990-1992.

Member, Organizing and Planning Committee, IV Conference on Rainfall Precipitations, American Meteorological Society & American Geophysical Union, Iowa City, May 1993.

Member, Scientific Committee, Hydrofractals '93, Lacco Ameno, Italia, May 1993.

Member, James B. Macelwane Medal Committee, American Geophysical Union, 1992-1994.

Chair, Hydrology Subgroup, NASA Soil Moisture Workshop, January 1994.

Member, Awards Committee on Technology, The Third World Network of Scientific Organizations, 1995-1998.

Member, Earth System Science and Applications Advisory Committee (ESSAAC), NASA, 1996- 1997.

Member, Hydrology Section Award Committee, American Geophysical Union, 1998 - 2000.

Chairman, Horton Medal Committee, American Geophysical Union, 2000-2002.

Member, Langbein Lecture Committee, American Geophysical Union, 2001-2002.

Chair, Committee in Strengths, Weaknesses, Opportunities and Threats, Hydrology Section, American Geophysical Union, 2003

Member, U.S. National Committee, International Institute for Applied System Analysis, 2004 - present

### **Keynote Lecturer**

Urban Water Systems Institute, Colorado State University, August 1970.

American Geophysical Union 52nd Annual Meeting, Conceptions in Hydrology, Washington, DC, 1971.

General Reporter, International Symposium on Mathematical Models in Hydrology, Warsaw, 1971.

General Reporter, International Symposium on Uncertainties in Hydrologic and Water Resources Systems, Tucson, Arizona 1972.

Advanced Seminar in Hydraulic Resources, Universidad Simón Bolívar, Caracas, January 1973.

First Interamerican Seminar on Water Resources Systems Analysis, Venezuela, March 1973.

Applications of Systems Analysis to Water Resources Problems (Naciones Unidas), Buenos Aires, Argentina, November 1973.

Graduate Course in Hydrology, CIDIAT, Mérida, Venezuela, 1972-1977.

Graduate Course in Transportation, Planning Division of the Ministry of Public Works, Venezuela, 1973-1977.

American Society of Civil Engineers, Specialty Conference on Probabilistic Methods in Engineering, Stanford University, June 1974.

Advanced Seminar in Water Resources, Universidad Simón Bolívar, Caracas. January 1975.

American Geophysical Union Symposium on Hydrologic Systems Analysis Aspects of Water Resources Planning, San Francisco, December 1974.

Plenary Conference of the Venezuelan Association for the Advancement of Science (AsoVAC), XXV Annual Convention, November 1975.

International Institute for Applied Systems Analysis, Vienna, Austria, Seminar on Streamflow Simulation, February 1976.

Seminar on Hydrology and Water Resources, COPPE, Rio de Janeiro, Brazil, October 1977.

Keynote Lecturer at the Chapman Conference on Application of Kalman Filter to Hydrology: Application of Kalman Filter in Rainfall-Runoff Studies, Pittsburgh, May 1978.

Modern Techniques in Hydrologic Prediction, INCYTH-BID, Buenos Aires, Argentina, March-April 1977.

Symposium of Flood Frequency Methods, American Geophysical Union, San Francisco, December 1977.

General Reporter, Chapman Conference on Design of Hydrologic Data Networks, Tucson, Arizona, December 1978.

Invited Expert, World Climate Conference, sponsored by the World Meteorological Organization and National Research Council, Geneva, February 1979.

Invited Expert, UNESCO Conference in Hydrology, COLCIENCIAS, Bogotá, Colombia, May 1979.

Keynote Speaker, Symposium on the Physical Basis of Hydrology, American Geophysical Union Annual Meeting, San Francisco, December 1979.

Keynote Speaker, Symposium on the Hydrology of the Amazon River Basin, Brasilia, August 1979.

Chairman, International Hydrologic Symposium, Caracas 1979.

Chairman, "Stochastic Hydrology: Is It Worth a Dam?," Symposium, American Geophysical Union Fall Annual Meeting, San Francisco, December 1979.

Keynote Speaker, First Workshop Brazil - Venezuela, on Civil Engineering, 1980.

Invited Participant, Study Conference on Land Surface Processes in Atmospheric General Circulation Models, Global Atmospheric Research Programme. World Meteorological Organization, Maryland, January 1981.

Invited State-of-the-Art Address on Geomorphological Applications in Watershed Hydrology, International Symposium on Rainfall-Runoff Modeling, Mississippi, May 1981.

International Institute for Applied Systems Analysis, IIASA, Scale Problems in Hydrology, Laxenburg, Austria, November 1980.

Chairman, International Symposium on the Understanding of Hydrologic Processes at the Basin Scale, Caracas, January 1982.

Convener, Conference on Scale Problems in Hydrology I, Caracas, January 1982.

Keynote Speaker, II International Meeting on Statistical Climatology, Lisbon, 1983.

Session Chairman, Plenary Session on the IAHS Hamburg Symposium "Scientific Procedures Applied to Planning, Design and Management of Water Resources Systems," Hamburg, August 1983.

Convener, Workshop on Scale Problems in Hydrology, Hamburg Symposium of the International Association of Scientific Hydrology, Hamburg, August 1983.

International Course in Water Resources, Perugia, Italy, July 1984, 1985, 1986.

Invited Lecturer, University of Genoa, Research Institute for the Hydrological Protection in Central Italy, Perugia, Italy, July 1984.

Invited Lecturer, Symposium "Investigations on Meso Scale Precipitation Fields," American Geophysical Union Annual Meeting, May 1984.

Invited Lecturer, Symposium “Scale Problems in Hydrology II,” Princeton, October 1984.

Co-Convener (with V. Gupta & E. Wood), Conference on Scale Problems in Hydrology II, Princeton, October 1984.

Keynote Speaker, IV International Symposium in Hydrology, Fort Collins, Colorado, July 1985.

Keynote Speaker, International Symposium on Flood Frequency and Risk Analyses, Baton Rouge, Louisiana, May 1986.

Convener, Workshop on the “Geomorphology and Numerical Modelling of Catchment Behavior,” IAHS II Scientific Assembly, Budapest, Hungary, July 1986.

Convener, American Geophysical Union, Chapman Conference on Modeling of Rainfall Fields, Universidad Simón Bolívar, Caracas, Venezuela, March 24-27, 1986.

Invited Participant, Dahlem Konferenzen on Resources and World Development: Water and Land, Berlin, April 27 - May 21, 1986.

Chairman, II Session of International Seminar on Drought Analysis, WARREDOC, Perugia, Italy, May 1986.

Convener and Keynote Speaker, International Seminar on Drought Analysis (Session on Research Needs in Drought Analysis), WARREDOC, Perugia, Italy, May 1986.

Invited Lecturer, Some Stochastic Models of Rainfall with Particular Reference to Hydrological Applications, D.R. Cox and I. Rodríguez-Iturbe, Joint Congress of the International Statistics Society and the Bernoulli Society, Tashkent, USSR, September 1986.

British Research Council Fellow, Imperial College, London, Department of Mathematics and Statistics, October 1986.

Annual Visiting Lecturer in Statistics in Water Resources, Center for Research in Water Resources and Center for Statistical Sciences, University of Texas, Austin, November 1987.

Invited Lecturer, Conference on Mesoscale Precipitation Analysis, Simulation and Forecasting, Massachusetts Institute of Technology, Cambridge, MA, September 13-16, 1988.

Invited All Union Conference, American Geophysical Union, Committee on Opportunities in Hydrologic Sciences, Washington, October 1988.

Invited Lecturer, Summer School on Environmental Dynamics, Istituto Veneto di Scienze, Lettere ed Arti, Venice, Italy, 1988 - Present.

Keynote Speaker, 8th International Conference on Computational Methods in Water Resources, Venice, Italy, June 1990.

Keynote Opening Lecturer, 8th Conference on Hydrometeorology, American Meteorological Society, Kananaskis, Canada, October 1990.

Chester Kisiel Memorial Lecturer, University of Arizona, Tucson, AZ, March 1991.

Keynote General Lecturer, 24th Congress of the International Association for Hydraulic Research, Madrid, Spain, September 1991.

Keynote Speaker, 20th Anniversary Celebration, School of Engineering, University of Florence, Symposium "L'Ingegneria per la Qualita' della Vita," Florence, Italy, October 14-16, 1991.

Invited Speaker, Symposium "The World at Risk: Natural Hazards and Climate Change," Massachusetts Institute of Technology, Cambridge, MA, January 1992.

Keynote Speaker, Symposium "Advances in Distributed Hydrology," Bergamo, Italy, June 1992.

Closing Lecture of the 5-year cycle of the Summer School in Environmental Dynamics (1988-1993), Istituto Veneto di Scienze, Lettere ed Arti, Venice, Italy, June 1993.

Keynote Speaker and General Lecturer, International Conference on Fractals in Hydrology, Hydrofractal 93, Ischia, Italy, October 12-15, 1993.

Visiting Invited Professor, Universita di Potenza, Italy, October 17-23, 1993.

Invited Lecturer, NASA Soil Moisture Workshop, Tiburon, California, January 25-27, 1994.

Invited Lecturer, Distinguished Water Resources Lecture, Civil Engineering Department, Colorado State University, Colorado, May 13, 1994.

Invited Lecturer, International Workshop on "Frontiers and Opportunities in Research in Hydrology Meteorology and Climate," Istituto Veneto di

Scienze, Lettere ed Arti, Venice, October 28-29, 1994.

Plenary Conference, “Fractal River Basins: Chance and Self-Organization,”  
40th Anniversary Assembly of the Venezuelan Association for the  
Advancement of Science, Caracas, November 1995.

Inaugural Address, Symposium La Nuova Idrologia, University of Padova,  
Italy, January 1996.

Invited Lecturer, “Landforms and River Networks I,” First Workshop on  
Stochastic and Statistical Methods in Hydrology (Rainfall, Landforms and  
Floods), CIMAT Guanajuato, México, March 25-28, 1996.

Inaugural Address, Symposium on Scale Problems in Hydrology, Vienna,  
Austria, June 1996.

Invited Lecturer, Summer School on Environmental Dynamics - Network  
Models, Venice, Italy, June 1997.

Keynote Speaker, Symposium on Hydrology in the 20<sup>th</sup> Century, Lessons  
from the Past and Challenges for the Future, XXV General Assembly,  
European Geophysical Society, Nice, France, April 2000.

Keynote Speaker, GEWEX/BAHC International Workshop on Soil Moisture  
Monitoring, Analysis and Prediction for Hydrometeorological and  
Hydroclimatological Applications, Norman Oklahoma, May 2000.

Invited Lecturer, Towards Integration of Hydrological and Ecological  
Sciences, Workshop Water Science and Technology Board, West Palm  
Beach, Florida, October 2000.

Invited Lecturer, 1<sup>st</sup> Kirkham Conference, Ames, Iowa, November 2000.

Keynote Opening Conference, Venezuelan Association for Advancement of  
Science, November 2000.

Keynote Speaker, Hydrology Days 2002, Fort Collins, Colorado, April 2002.

Plenary Lecture, XIV Conference on Computational Methods in Water  
Resources, Delft, June 2002.

Keynote Speaker, Chapman Conference in Ecohydrology, Taos, New  
Mexico, September 2002.

Curso Magistral, Fronteras de la Hidrologia Superficial del Siglo 21,  
Universidad International Menendez Pelayo, Valencia, Spain, July 2003.

Keynote Speaker, Hydrology: Science and Practice for the 21st Century-  
International Conference, London, July 2004.

Keynote Speaker, Celebrating Statistics: International Conference in Honour  
of Sir David Cox, Neuchatel, July 2004.

Invited Lecturer, Voices of World Program, Polar Foundation, Caracas,  
Venezuela, 2004.

Co-Director and Lecturer, Alpine Summer School on Water-Vegetation  
Interactions and Biodiversity in Changing Environments, Valsavarenche,  
Italy, 2005.

Invited Lecturer and Convener, Vatican Academy of Sciences Conference on  
Water and the Environment, Vatican City, 2005.

Keynote Lecturer, Congress in Water and Environment, Valencia, Spain,  
2007.

Keynote Lecturer, 32<sup>nd</sup> Congress of the International Association of  
Hydraulic  
Research, Venice, Italy, 2007.

Invited lecturer, Latsis Symposium 2007, “Research Frontiers on  
Environmental and Sustainability”, ETH Zurich, Switzerland, 2007.

Keynote Lecturer at the XXXII Congress of the International Association for  
Hydraulic Research, Venice, Italy, June 2007.

### **Editorial Boards**

*Journal of Hydrology*, Elsevier, North Holland, 1977-1991, Associate Editor.

*Acta Científica Venezolana*, Venezuelan Association for the Advancement of  
Science (AsoVAC), 1976-1977.

*Hydrological Sciences*, Journal of the International Association of  
Hydrological Sciences. 1980-1989, Associate Editor.

Editorial Advisory Board, *Water Science and Technology Library*, D. Reidel  
Publishing Company, 1983-1992.

Editorial Advisory Board, *Stochastic Hydrology and Hydraulics*, Springer  
Journal, 1986-1991.

Editorial Board, *Advances in Water Resources*, Elsevier Publishing Company,  
1992- present.

Editorial Board, *Ingenieria Hidraulica en Mexico*, 1994- present.

Editorial Board, *Journal of Geophysical Research - Atmospheres*, American Geophysical Union, 1998- 2002.

Editorial Board, *Biogeosciences*, European Geosciences Union 2004-2007.

Editorial Board, *Environmental Engineering Science*, 2005-present.

Editorial Board, *Ecohydrology*, 2008-present.

### **Principal Publications**

#### **Books:**

*Water and the Environment*, edited by I. Rodríguez-Iturbe and M. Sanchez Sorondo, Scripta Varia 108, Pontifical Academy of Sciences, 234 pp., 2007

*Ecohydrology of Water Controlled Ecosystems: Soil Moisture and Plant Dynamics*, by I. Rodríguez-Iturbe and A. Porporato, Cambridge University Press, 450 pp., December 2004.

*Fractal River Basins: Chance and Self-Organization* by I. Rodríguez-Iturbe and A. Rinaldo, Cambridge University Press, 580 pp., May 1997.

*Rainfall Fields: Estimation Analysis and Prediction*, edited by H.R. Cho, M. Fritsch, V.K. Gupta, I. Rodríguez-Iturbe, and M. Taqqu, published as a special volume by the American Geophysical Union from the *Journal of Geophysical Research*, Vol. 92, D8, August 1987.

*Scale Problems in Hydrology: Runoff Generation and Basin Response*, edited by V.K. Gupta, I. Rodríguez-Iturbe, and E.F. Wood, FD. Reidel Publishing Company, 244 pp., May 1986.

*Random Functions and Hydrology*, by R. L. Bras and I. Rodríguez-Iturbe, Addison-Wesley Publishing Company, Reading, MA, 590 pp., January 1985. Unabridged Dover republication of this edition, 1993.

*Scale Problems in Hydrology*, edited by I. Rodríguez-Iturbe and V.K. Gupta, published as a double issue of the *Journal of Hydrology*, Elsevier Publishing Company, 257 pp., August 1983.

#### **Video:**

Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, *A Model of Catchment Evolution: A Computer Animation*, 1990.

### **Papers in Journals:**

Suweis, S.S., Bertuzzo, E., Botter, G., Porporato, A., Rodriguez-Iturbe, I., and A. Rinaldo, The impact of stochastic fluctuations in the storage-discharge relation on streamflow distributions. Accepted for publication, *Water Resources Research*, June 2009.

Bertuzzo, E., Casagrandi, R., Gatto, M., Rodriguez-Iturbe, I., and A. Rinaldo, On spatially explicit models of cholera epidemics, accepted for publication, *Journal of the Royal Society Interface*, June 2009.

Covertino, M., Muneeppeerakul, R., Azaele, S., Bertuzzo, E., Rinaldo, A., and I. Rodriguez-Iturbe, On neutral metacommunity patterns of river basins at different scales of aggregation. Accepted for publication, *Water Resources Research*, May 2009.

Caylor, K.K., Scanlon, T.M., and I. Rodriguez-Iturbe, Ecohydrological optimization of pattern and processes on water limited ecosystems: A trade off-based hypothesis, accepted for publication, *Water Resources Research*, May 2009.

Azaele, S., R. Muneeppeerakul, A. Maritan, A. Rinaldo, and I. Rodríguez-Iturbe, Predicting spatial similarity of freshwater fish biodiversity, in press, *Proceedings National Academy of Sciences*, pnas. 0805845106, March 2009.

Tamea, S., F. Laio, L. Ridolfi, P. D'Odorico, and I. Rodríguez-Iturbe, Stochastic soil moisture dynamics in groundwater-dependent ecosystems, *Water Resources Research*, Vol. 45, W05420, doi:10.1029/2008 WR007293, 2009.

Laio, F., S. Tamea, L. Ridolfi, P. D'Odorico, and I. Rodríguez-Iturbe, Stochastic water table dynamics in groundwater-dependent ecosystems, *Water Resources Research*, Vol. 45, W05419, doi:10.1029/2008 WR007292, 2009.

Botter, G., A. Porporato, I. Rodríguez-Iturbe, and A. Rinaldo, Stochastic non-linear storage-discharge relations and catchment streamflow regimes, in press, *Water Resources Research*, 2009.

Rodríguez-Iturbe, I., R. Muneeppeerakul, E. Bertuzzo, S. Levin, and A. Rinaldo, River networks as ecological corridors: a complex system perspective for integrating hydrologic, geomorphologic, and ecologic dynamics, *Water Resources Research*, 45, W01413, 2009.

Muneeppeerakul, R., Bertuzzo, E., Rinaldo, A., and I. Rodríguez-Iturbe, Patterns of vegetation biodiversity: the roles of dispersal directionality and

- river network structure, *Journal of Theoretical Biology*, 252, 221-229, 2008.
- Botter, G., Zanardo, S., Porporato, A., Rodríguez-Iturbe, I., and A. Rinaldo, Ecohydrological model of flow duration curves and annual minima, *Water Resources Research*, 44, W08418, doi:10.1029/2008WR006814, 12p., 2008.
- Muneepeerakul, C. P., Miralles-Wilhem, F., Tamea, S., Rinaldo, A., and I. Rodríguez-Iturbe, Coupled hydrologic and vegetation dynamics in wetland ecosystems, *Water Resources Research*, 44, W07421, 2008.
- Muneepeerakul, R., Bertuzzo, E., Lynch, H., Fagan, W.F., Rinaldo, A., and I. Rodríguez-Iturbe, Netural metacommunity models predict fish diversity patterns in Mississippi-Missouri basin, *Nature*, Vol. 453, 220-223, May 2008.
- Bertuzzo, E., Azaele, S., Maritan, A., Gatto, M., Rodríguez-Iturbe, I., and A. Rinaldo, On the space-time evolution of a cholera epidemics, *Water Resources Research*, doi:10.1029/2007 WR006211, 2008.
- Muneepeerakul, R., Rinaldo, A., Levin, S.A., and I. Rodríguez-Iturbe, Signatures of vegetation functional diversity in river basins, *Water Resources Research*, doi:10.1029/2007WR006153, 2008.
- Ridolfi, L., D'Odorico, P., Laio, F., Tamea, S., and I. Rodríguez-Iturbe, Coupled stochastic dynamics of water table and soil moisture in bare soil conditions, *Water Resources Research*, doi:10.1029/2007WR006707, 2008.
- Botter, G., Daly, E., Porporato, A., Rodríguez-Iturbe, I., and A. Rinaldo, Probabilistic dynamics of soil nitrate: the coupling of eco-hydrological and bio-geochemical processes, *Water Resources Research*, doi:10.1029/2007WR006108, 2008.
- Plucinski, M. Plucinski, S., and I. Rodríguez-Iturbe, Consequences of the fractal architecture of trees on their structural measures, in press, *Journal of Theoretical Biology*, Vol. 251, No. 1, 82-92, 2008.
- Muneepeerakul, R., Rinaldo, A., and I Rodríguez-Iturbe, Effects of river flow scaling properties on riparian width and vegetation biomass, *Water Resources Research*, doi:10.1029/2007WR006100, 2007.
- Convertino, M., R. Rigon, A. Maritan, I. Rodríguez-Iturbe, A. Rinaldo, Probabilistic structure of tributaries in river networks, *Water Resources Research*, Vol. 43, W11418, doi:10.1029/2007WR006176, 2007.
- Botter, G., F. Peratoner, A. Porporato, I. Rodríguez-Iturbe, A. Rinaldo, Signatures of large-scale soil moisture dynamics on streamflow statistics across U.S. climate regions, *Water Resources Research*, Vol. 43, W11413,

doi:10.1029/2007WR006162, 2007.

Scanlon, T. M., K.K. Caylor, S. A. Levin, I. Rodríguez-Iturbe, Positive feedbacks promote power-law clustering of Kalahari vegetation, *Nature*, Vol. 449, doi:10.1038/Nature06060, September 2007.

Rodríguez-Iturbe, I., P. D'Odorico, F. Laio, L. Ridolfi, S. Tamea, Challenges in humid land ecohydrology: interactions of water table and unsaturated zone with climate, soil, and vegetation, *Water Resources Research*, Vol. 43, doi:10.1029/2007WR006073, 2007

Manfreda, S., M. F. McCabe, M. Fiorentino, I. Rodríguez-Iturbe, E. Wood, Scaling characteristics of spatial patterns of soil moisture from distributed modelling, *Advances in Water Resources*, Vol. 30, doi:10.1016/j.advwatres.2006.2145-2150, 2007.

Grimaldi, S., I. Rodríguez-Iturbe, L. Ubertini, (2007), Recent developments in hydrologic analysis, *Advances in Water Resources*, Vol. 30, doi:1016/j.advwatres.2007, 2007.

Mueepeerakul, R., J.S. Weitz, S.A. Levin, A. Rinaldo, and I. Rodríguez-Iturbe, A neutral metapopulation model of biodiversity in river networks. *Journal of Theoretical Biology*, 245, 351-363, 2007.

Nordbotten J. M., I. Rodríguez-Iturbe, M. A. Celia, Stochastic coupling of rainfall and biomass dynamics, *Water Resources Research*, 43, W01408, doi:10.1029/2006WR005068, 2007.

Bertuzzo, E., A. Maritan, M. Gatto, I. Rodríguez-Iturbe, A. Rinaldo, River networks and ecological corridors: Reactive transport on fractals, migration fronts, hydrochory, *Water Resources Research*, 43, W04419, doi:10.1029/2006WR005533, 2007.

Settin T., G. Botter, I. Rodríguez-Iturbe, A. Rinaldo, Numerical studies on soil moisture distributions in heterogeneous catchments, *Water Resources Research*, 43, W05425, doi:10.1029/2006WR005737, 2007.

Botter G., A. Porporato, E. Daly, I. Rodríguez-Iturbe, A. Rinaldo, Probabilistic characterization of base flows in river basins: Roles of soil, vegetation, and geomorphology, *Water Resource Research* 43, W06404, doi:10.1029/2006WR005397, 2007.

Muneepeerakul R., S. A. Levin, A. Rinaldo, I. Rodríguez-Iturbe, On biodiversity in river networks: A trade-off metapopulation model and comparative analysis, *Water Resources Research*, 43, W07426, doi:10.1029/2006WR005857, 2007.

- Botter, G., Porporato, A., Rodriguez-Iturbe, I., and A. Rinaldo, Basin-scale soil moisture dynamics and the probabilistic characterization of carrier hydrologic flows: Slow, leaching-prone components of the hydrologic response, *Water Resources Research*, Vol. 43, W02417, doi:10.1029/2006WR005043, 2007.
- Puma, M.J. Rodríguez-Iturbe, I., Celia, M.A., and A.J. Guswa, Implications of rainfall temporal resolution for soil moisture and transpiration modeling, *Transport in Porous Media*, DOI 10.1007/s11242-006-9057-4, 2006. 2006.
- Nordbotten, J.M. Rodríguez-Iturbe, I. and M.A. Celia, Non-uniqueness of evapotranspiration due to spatial heterogeneity of plant species, *Proceedings Royal Society, Series A*, (462), 2359-2371, 2006.
- Zea-Cabrera, E., Iwasa, Y., Levin, S., and I. Rodríguez-Iturbe, Tragedy of the commons in plant water use, *Water Resources Research*, Vol. 42, 6, W06D02, 12 p., 2006.
- Rodríguez-Iturbe, I., Isham, V., Cox, D.R., Manfreda, S., and A. Porporato, Space-time modeling of soil moisture: stochastic rainfall forcing with heterogeneous vegetation, *Water Resources Research*, Vol. 42 W06D05, 11 p., 2006.
- Manfreda, S. and I. Rodríguez-Iturbe, On the spatial and temporal sampling of soil moisture fields, *Water Resources Research*, Vol. 42, 5, W05409, 10 p., 2006
- Paola, C. Foufoula-Georgou, E. Dietrich, W.E., Hondzo, M. Mohrig, D., Parker, G., Power, M.E., Rodríguez-Iturbe I., Voller, V. and P. Wilcock, Towards a unified science of the earth's surface: opportunities for synthesis among hydrology, geomorphology, geochemistry and ecology, *Water Resources Research*, Vol. 42, W03S10, 6 p., 2006.
- Caylor, K.K., D'Odorico, P., and I. Rodríguez-Iturbe, On the ecohydrology of structurally heterogenous semi-arid landscapes, *Water Resources Research*, Vol. 42, W07424, 13 p., 2006.
- Grimaldi, S., I. Rodríguez-Iturbe, L. Ubertini, (2005), New frontiers of hydrology, *Advances in Water Resources*, Volume 28, issue 6, June 2005, Pages 541-542.
- Caylor, K. Manfreda, S. and I. Rodriguez-Iturbe, On the coupled geomorphological and ecohydrological organization of river basins, *Advances in Water Resources*, 28, pp 69-86, 2005.
- Puma, Michael J., Celia, Michael A., Rodríguez-Iturbe, I., and Guswa,

Andrew J., Functional relationship to describe temporal statistics of soil moisture averaged over different depths, *Advances in Water Resources*, (28), 553-556, 2005.

Manzoni S., Porporato A., D'Odorico P., Laio F., Rodríguez-Iturbe I, "Soil nutrient cycles as a nonlinear dynamical system", *Nonlinear Processes in Geophysic*, 11 (5-6), 2005.

Scanlon, T.M., Caylor, K.K., Manfreda, Salvatore, Levin, S.A., and Rodríguez-Iturbe, Ignacio, "Dynamic response of grass cover to rainfall variability: Implications for the function and persistence of savanna ecosystems." *Advances in Water Resources* 28 (2005) 291-302.

Isham, V., Cox, D.R., Rodríguez-Iturbe, I., Porporato, A., and S. Manfreda, Mathematical characterization of the space-time variability of soil moisture, *Proceedings Royal Society, Series A* (461), 4035-4055, 2005.

Caylor, K.K., Shugart, H.H., and I. Rodríguez-Iturbe, Tree canopy effects on simulated water stress in Southern African Savannas, *Ecosystems*, (8), 17-32, 2005.

Fernandez-Illescas, C. and I. Rodríguez-Iturbe, The impact of interannual rainfall variability in the spatial and temporal patterns of vegetation in a water-limited ecosystem, *Advances in Water Resources*, 27 (1), 83-96, 2004.

Daly, E., Porporato, A. and I. Rodríguez-Iturbe, Coupled dynamics of photosynthesis, transpiration and soil water balance: I. Upscaling from hourly to daily level, *Journal of Hydrometeorology*, Vol. 5. No. 3, 546-558, 2004.

Daly, E., Porporato, A., and I. Rodríguez-Iturbe, Coupled dynamics of photosynthesis, transpiration and soil water balance: II. Stochastic analysis and ecohydrological significance, *Journal of Hydrometeorology*, Vol 5 No. 3 559-566, 2004.

Guswa, A.J., Celia, M.A., and I. Rodríguez-Iturbe, Effect of vertical resolution on prediction of transpiration in water-limited ecosystems, *Advances in Water Resources*, Vol. 27, No. 5, 467-480, 2004.

Caylor, K.K., Scanlon, T.M., and I. Rodríguez-Iturbe, Feasible optimality of vegetation patterns, *Geophysical Research Letters*, Vol. 31, L13502, 1-4, 2004.

D'Odorico, P., Porporato, A., Laio, F., Ridolfi, L., and I Rodríguez-Iturbe, Probabilistic modeling of nitrogen and carbon dynamics in water-limited ecosystems, *Ecological Modeling*, 179, 205-219, 2004.

Porporato, A., Daly, E., and I. Rodríguez-Iturbe, Soil water balance and ecosystem response to climate change, *American Naturalist*, Vol. 164 No. 5, 625-632, 2004.

Fernandez-Illescas, C., and I. Rodríguez-Iturbe, “Hydrologically driven hierarchical competition – colonization models: the impact of interannual climate fluctuations”, *Ecological Monographs*, 73(2), 207-222, 2003.

Ridolfi L., D'Odorico P., Porporato A. and I. Rodríguez-Iturbe (2003) Stochastic soil moisture along a hillslope. *J. Hydrology (Invited paper)*, 272 (1-4), 264-275, 2003.

Porporato A., Laio F., Ridolfi L., Caylor K., and I. Rodríguez-Iturbe (2003). Soil moisture and plant stress dynamics along the Kalahari precipitation gradient. *J. Geophys Res.-Atmospheres*, 108(3): 4127-4134.

Porporato A., D'Odorico P., Laio F., and I. Rodríguez-Iturbe, Hydrologic controls on soil carbon and nitrogen cycles. I Modeling scheme. *Adv. Water Res.*, Vol. 26, #1, pp-45-58, 2003.

D'Odorico P., Laio F., Porporato A., and I. Rodríguez-Iturbe, Hydrologic controls on soil carbon and nitrogen cycles. II A case study. *Adv. Water Res.*, Vol. 26, pp 59-70, 2003.

Rodríguez-Iturbe, I., Hydrologic dynamics and ecosystem structure, *Water Science and Technology*, 47 (6), 18-24, 2003.

Ridolfi, L., D'Odorico, P., Porporato, A. And I. Rodríguez-Iturbe, The influence of stochastic soil moisture dynamics in gaseous emission of No, N2O and N2, *Hydrological Science Journal*, 48(5), 781-798, 2003.

Laio F., Porporato A., Ridolfi L., and I. Rodríguez-Iturbe, On the seasonal dynamics of mean soil moisture., *J. Geophysical Res. (Atmospheres)*, Vol. 104, D15, JD001252, Acl 8-1, 8-9, 2002.

van Wijk, M.T. and I. Rodríguez-Iturbe, “Tree-grass competition in space and time: insights from a simple cellular automata model based on eco-hydrological dynamics”, *Water Resources Research*, Vol. 38, #2, 18.1- 18.15, 2002.

Porporato, A., P. D'Odorico, F. Laio, L. Ridolfi and I. Rodríguez-Iturbe, “Eco-hydrology of water controlled ecosystems”, invited paper, 25<sup>th</sup> anniversary issue, *Advances in Water Resources*, Vol. 25, #12, 1335-1348, 2002.

Guswa, A.J., M.A. Celia and I. Rodríguez-Iturbe, “Models of soil moisture

dynamics in ecohydrology: a comparative study”, *Water Resources Research*, Vol. 38, #2, 5.1 - 5.15, 2002.

Porporato A. and I. Rodríguez-Iturbe, Ecohydrology A challenging multidisciplinary research perspective. *J. Hydrol. Sci.*, Invited paper, 47(5), 811-821, 2002.

Rodríguez-Iturbe, I., A. Porporato, F. Laio and L. Ridolfi, “Plants in water controlled ecosystems: Active role in hydrological processes and response to water stress, I. Scope and general outline,” *Advances in Water Res.* (24) pp. 695-705, 2001.

Laio F., A. Porporato, L. Ridolfi and I. Rodríguez-Iturbe, “Plants in water controlled ecosystems: Active role in hydrological processes and response to water stress, II. Probabilistic soil moisture dynamics,” *Advances in Water Res.* (24), pp. 707-723, 2001.

Porporato A., F. Laio, L. Ridolfi, and I. Rodríguez-Iturbe, “Plants in water controlled ecosystems: Active role in hydrological processes and response to water stress. III. Vegetation water stress,” *Advances in Water Res.* (24), pp. 725-744, 2001.

Laio F., A. Porporato, F. Fernandez-Illescas and I. Rodríguez-Iturbe, “Plants in water controlled ecosystems: Active role in hydrological processes and response to water stress, IV. Applications to real cases,” *Advances in Water Res.*, (24) pp. 745-762, 2001.

Laio F., A. Porporato, L. Ridolfi and I. Rodríguez-Iturbe, “On the mean first passage times for stochastic processes driven by shot noise,” *Phys. Rev. E.*, Vol. 63, pp. 036105-1 – 036105-8, 2001.

Rodríguez-Iturbe, I. A. Porporato, F. Laio, and L. Ridolfi, “Intensive or extensive use of soil moisture: plant strategies to cope with stochastic water availability,” *Geophysical Research Letters*, Vol. 28, No. 23, 4495-4497, December 2001.

Fernandez-Illescas, C., A. Porporato, F. Laio and I. Rodríguez-Iturbe, “The role of soil texture in water controlled ecosystems,” *Water Resources Research*, Vol. 37, No 12, 2863-2872, 2001.

Rodríguez-Iturbe, I., “Ecohydrology: A Hydrologic Perspective of Climate-Soil-Vegetation Dynamics” (invited opening article of the annual series “An Opinion for the Future”), *Water Resources Research* 23, pp. 349-357, 2000.

Porporato, A., P. D’Odorico, L. Ridolfi and I. Rodríguez-Iturbe, “A Spatial Model for Soil-Atmosphere Interaction: Model Construction and Linear

Stability Analysis,” invited paper to the first issue of *Journal of Hydrometeorology*, 1(1), pp. 61-74, 2000.

Wheater, H.S., V.S. Isham, D.R. Cox, R.E. Chandler, A. Kakou, P.J. Northrop, L. Oh, C. Onof, and I. Rodríguez-Iturbe, “Spatial-Temporal Rainfall Fields: Modelling and Statistical Aspects,” *Hydrol. and Earth System Sci.*, 4(4), pp. 581-601, 2000.

D’Odorico, P., and I. Rodríguez-Iturbe, “Space-Time Self-Organization of Mesoscale Rainfall and Soil Moisture,” *Advances in Water Resources*, Vol. 23, #4, pp. 349-358, 2000.

Ridolfi, L., P. D’Odorico, A. Porporato, I. Rodríguez-Iturbe, “Duration and Frequency of Water Stress in Vegetation: An Analytical Model,” *Water Resources Research*, Vol. 36, #8, pp. 2297-2308, 2000.

D’Odorico, P., L. Ridolfi, A. Porporato, and I. Rodríguez-Iturbe, “Preferential States of Seasonal Soil Moisture: the Impact of Climate Fluctuations,” *Water Resources Research*, Vol. 36, #8, pp. 2209-2220, 2000.

Ridolfi, L., P. D’Odorico, A. Porporato, I. Rodríguez-Iturbe, “Impact of Climate Variability on the Vegetation Water Stress,” *Journal of Geophysical Research – Atmosphere*, Vol. 105, #D14, pp. 18013-18026, 2000.

Matsoukas, C., S. Islam and I. Rodríguez-Iturbe, “Detrended Fluctuation Analysis of Rainfall and Streamflow Time Series,” *Journal of Geophysical Research – Atmosphere*, Vol. 105 (D23), pp. 29,165-29,172, Dec. 2000.

Rodríguez-Iturbe, I., P. D’Odorico, A. Porporato and L. Ridolfi, “Tree-Grass Coexistence in Savannas: The Role of Spacial Dynamics,” *Geophysical Research Letters*, Vol. 26, (2) pp. 247-250, 1999.

Rodríguez-Iturbe, I., A. Porporato, L. Ridolfi, V. Isham and D. R. Cox, “Probabilistic Modeling of Water Balance at a point: The Role of Climate, Soil and Vegetation,” *Proceedings Royal Society Series A*, 455, pp. 3789-3805, 1999.

Rodríguez-Iturbe, I., P. D’Odorico, A. Porporato and L. Ridolfi, “On the Spatial and Temporal Links Between Vegetation, Climate and Soil Moisture,” *Water Resources Research*, Vol. 35, #12, pp. 3709-3722, 1999.

Liu, Q., S. Islam, I. Rodríguez-Iturbe, and Y. Le, “Phase-Space Analysis of Daily Streamflow: Characterization and Prediction,” *Advances in Water Resources*, Vol. 21, No. 6, 463-475, 1998.

Rodríguez-Iturbe, I., P. D’Odorico and A. Rinaldo, “Configuration Entropy of

Fractal Landscapes,” *Geophysical Research Letters*, Vol. 25, No. 7, 1015-1018, 1998.

Cieplak, M., Giacometti, A., A. Maritan, A. Rinaldo, I. Rodríguez-Iturbe and J. Banavar, “Models of Fractal River Basins,” *Journal of Statistical Physics*, Vol. 91, No. 1, pp. 1-15, 1998.

R. Rigon, Rodríguez-Iturbe, I. and A. Rinaldo and, “Feasible Optimality Implies Hack’s Law,” *Water Resources Research*, Vol. 43 (11), 3181-3190, 1998.

Rodríguez-Iturbe, I., M. Marani, P. D’Odorico and A. Rinaldo, “On Space-Time Scaling of Cumulated Rainfall Fields,” *Water Resources Research*, Vol. 34 (12), 3461-3470, 1998.

Rodríguez-Iturbe, I., P. D’Odorico and A. Rinaldo, “A Possible Self-Organizing Dynamics for Land-Atmosphere Interaction,” *Journal of Geophysical Research - Atmosphere*, Vol. 108 (D18) 23071-32077, 1998.

Caldarelli, G., A. Maritan, A. Giacometti, I. Rodríguez-Iturbe, and A. Rinaldo, “Randomly Pinned Landscape Evolution,” *Physical Review E*, 55, R4865-R4868, May 1997.

Rinaldo, A., and I. Rodríguez-Iturbe, “Geomorphological Theory of the Hydrologic Response,” *Hydrologic Processes*, (Special Issue by Invitation), 10, 803-829, 1996.

Maritan, A., A. Rinaldo, R. Rigon, A. Giacometti, and I. Rodríguez-Iturbe, “Scaling Laws for River Networks,” *Physical Review E*, 53(2), 1510-1515, February 1996.

Castelli, F., and I. Rodríguez-Iturbe, “On the Dynamical Coupling of Large-Scale Spatial Patterns of Rainfall and Soil Moisture,” *Tellus*, 48A(2), 290-311, 1996.

Rinaldo, A., A. Maritan, F. Colaiori, A. Flammini, R. Rigon, I. Rodríguez-Iturbe, and J. Banavar, “Thermodynamics of Fractal Networks,” *Physical Review Letters*, Vol. 76(18), 3364-3367, 1996.

Entekhabi, D., I. Rodríguez-Iturbe, and F. Castelli, “Mutual Interaction of Soil Moisture State and Atmospheric Processes,” *Journal of Hydrology*, 184, p. 3-17, 1996.

Castelli, F., I. Rodríguez-Iturbe, and D. Entekhabi, “An Analytical Framework for the Modelling of the Spatial Interaction Between the Soil Moisture and the Atmosphere,” *Journal of Hydrology*, 184, pp. 19-34, 1996.

Rigon, R., I. Rodríguez-Iturbe, A. Rinaldo, A. Maritan, A. Giacometti, and D. Tarboton, "On Hack's Law," *Water Resources Research*, Vol. 32(11), pp. 3367-3374, Nov. 1996.

Rinaldo, A., G. Vogel, R. Rigon, and I. Rodríguez-Iturbe, "Can One Gauge the Shape of a Basin," *Water Resources Research*, 31(4), 1119-1128, April 1995.

Rinaldo, A., W. E. Dietrich, R. Rigon, G. Vogel, and I. Rodríguez-Iturbe, "Climate Signatures on Geomorphology," *NATURE*, 347(6523), 632-635, April 13, 1995.

Castelli, F., and I. Rodríguez-Iturbe, "Soil Moisture-Atmosphere Interaction in a Moist Semigeostrophic Model of Baroclinic Instability," *Journal of the Atmospheric Sciences*, 52(11), 2152-2159, June 1995.

Rodríguez-Iturbe, I., G. K. Vogel, R. Rigon, D. Entekhabi, F. Castelli, and A. Rinaldo, "On the Spatial Organization of Soil Moisture Fields," *Geophysical Research Letters*, 22(20), 2757-2760, October 1995.

Rodríguez-Iturbe, I., M. Marani, R. Rigon, and A. Rinaldo, "Self-Organized River Basin Landscapes: Fractal and Multifractal Characteristics," *Water Resources Research*, 30(12), 3531-3539, 1994.

Marani, M., A. Rinaldo, R. Rigon, and I. Rodríguez-Iturbe, "Geomorphological Width Functions and the Random Cascade," *Geophysical Research Letters*, 21(19), 2123-2127, 1994.

Entekhabi, D., and I. Rodríguez-Iturbe, "Analytical Framework for the Characterization of the Space-Time Variability of Soil Moisture," *Advances in Water Resources*, 17(1-2), 35-46, 1994.

Rigon, R., A. Rinaldo, and I. Rodríguez-Iturbe, "On Landscape Self-Organization," *Journal of Geophysical Research (Solid Earth)*, 99(B6), 11,971-11,993, 1994.

Ijjaaz-Vasquez, E., R. L. Bras, and I. Rodríguez-Iturbe, "Self-Affine Scaling of Fractal River Courses and Basin Boundaries," *Physica A*, 209, 288-300, 1994.

Rinaldo, A., I. Rodríguez-Iturbe, R. Rigon, E. Ijjasz-Vasquez, and R.L. Bras, "Self-Organized Fractal River Networks," *Physical Review Letters*, 70(6):822-825, 1993.

Islam, S., R.L. Bras, and I. Rodríguez-Iturbe, "A Possible Explanation for Low Correlation Dimension Estimates for the Atmosphere," *Journal of*

*Applied Meteorology*, 32(2):203-208, 1993.

Ijjasz-Vasquez, E.J., R.L. Bras, I. Rodríguez-Iturbe, R. Rigon, and A. Rinaldo, "Are River Basins Optimal Channel Networks?," *Advances in Water Resources*, 16(1), 69-80, 1993.

Rigon, R., A. Rinaldo, I. Rodríguez-Iturbe, R.L. Bras, and E. Ijjasz-Vasquez, "Optimal Channel Networks: A Framework for the Study of River Basin Morphology," *Water Resources Research*, 29(6), 1635-1646, 1993.

Ijjasz-Vasquez, E., R.L. Bras, and I. Rodríguez-Iturbe, "Hack's Relation and Optimal Channel Networks: The Elongation of River Basins as a Consequence of Energy Optimization," *Geophysical Research Letters*, 20(15), 1583-1586, 1993.

Rodríguez-Iturbe, I., E.J. Ijjasz-Vásquez, R.L. Bras, and D.G. Tarboton, "Power-Law Distribution of Mass and Energy in River Basins," *Water Resources Research*, 28(4):1089-1093, 1992.

Rodríguez-Iturbe, I., A. Rinaldo, R. Rigon, R.L. Bras, A. Marani, and E.J. Ijjasz-Vásquez, "Energy Dissipation, Runoff Production, and the 3-Dimensional Structure of River Basins," *Water Resources Research*, 28(4):1095-1103, 1992.

Entekhabi, D., I. Rodríguez-Iturbe, and R.L. Bras, "Variability in Large-Scale Water Balance with Land Surface-Atmosphere Interaction," *Journal of Climate*, 5:798-813, 1992.

Rodríguez-Iturbe, I., A. Rinaldo, R. Rigon, R.L. Bras, and E. Ijjasz-Vásquez, "Fractal Structures as Least Energy Patterns: The Case of River Networks," *Geophysical Research Letters*, 19(9):889-892, 1992.

Rinaldo, A., I. Rodríguez-Iturbe, R. Rigon, R.L. Bras, E. Ijjasz-Vásquez, and A. Marani, "Minimum Energy and Fractal Structures of Drainage Networks," *Water Resources Research*, 28(4):2183-2195, 1992.

Willgoose, Gary, R.L. Bras, and I. Rodríguez-Iturbe, "The Relationship Between Catchment and Hillslope Properties: Implications of a Catchment Evolution Model," *Geomorphology*, 5:21-37, 1992.

Tarboton, D.G., R.L. Bras, and I. Rodríguez-Iturbe, "A Physical Basis for Drainage Density," *Geomorphology*, Special Issue on Fractals in Geomorphology, 5(59-76), 1992.

Tarboton, D.G., R.L. Bras, and I. Rodríguez-Iturbe, "On the Extraction of Channel Networks from Digital Elevation Data," *Hydrological Processes*,

Vol. 5:81-100, 1991.

Islam, S., D. Entekhabi, R.L. Bras, and I. Rodríguez-Iturbe, "Reply to Burlando and Rosso," *Journal of Geographical Research (Atmosphere)*, 1991.

Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, "A Coupled Channel Network Growth and Hillslope Evolution Model: 1. Theory," *Water Resources Research*, 27(7): 1671-1684, 1991.

Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, "A Coupled Channel Network Growth and Hillslope Evolution Model: 2. Nondimensionalization and Applications," *Water Resources Research*, 27(7):1685-1696, 1991.

Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, "A Physical Explanation of an Observed Link Area-Slope Relationship," *Water Resources Research*, 27(7):1697-1702, 1991.

Rodríguez-Iturbe, I., D. Entekhabi, and R.L. Bras, "Nonlinear Dynamics of Soil Moisture at Climate Scales: 1. Stochastic Analysis," *Water Resources Research*, 27(8):1899-1906, 1991.

Rodríguez-Iturbe, I., D. Entekhabi, J.S. Lee, and R.L. Bras, "Nonlinear Dynamics of Soil Moisture at Climate Scales: 2. Chaotic Analysis," *Water Resources Research*, 27(8):1907-1915, 1991.

Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, "Results from a New Model of River Basin Evolution," *Earth Surface Processes and Landforms*, 16(237-254), 1991.

Rodríguez-Iturbe, I., "Exploring Complexity in the Structure of Rainfall," *Adv. Water Resources*, 14(4):162-167, 1991.

Islam, S., D. Entekhabi, R.L. Bras, and I. Rodríguez-Iturbe, "Parameter Estimation and Sensitivity Analysis for the Modified Bartlett-Lewis Rectangular Pulses Model of Rainfall," *Journal of Geophysical Research (Atmosphere)*, 95(D3):1035-2046, 1990.

Sharifi, M.B., K.P. Georgakakos, and I. Rodríguez-Iturbe, "Evidence of Deterministic Chaos in the Pulse of Storm Rainfall," *Journal of Atmospheric Sciences*, 47(7):888-893, 1990.

Tarboton, D.G., R.L. Bras, and I. Rodríguez-Iturbe, "Comment on the Fractal Dimension of Stream Networks" by P. LaBarbera and R., Rosso, *Water Resources Research*, 26(9):2243-2245, 1990.

Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, "A Model of the Evolution of River Basins," *EOS, Transactions American Geophysical Union*, 71(47):1806-1807, 1990.

Rodríguez-Iturbe, I., B. Febres de Power, K.P. Georgakakos, and M.M. Sharifi, "Chaos in Rainfall," *Water Resources Research*, 25(7):1667-1675, 1989.

Entekhabi, D., I. Rodríguez-Iturbe, and P.S. Eagleson, "Probabilistic Representation of the Rainfall Process by a Neyman-Scott Rectangular Pulses Model: Parameter Estimation and Validation," *Water Resources Research*, 25:295-302, 1989.

Rodríguez-Iturbe, I., D.R. Cox, and V. Isham, "A Point Process Model for Rainfall: Further Developments," *Proceedings Royal Society of London, Series A*, 417:283-298, 1988.

Islam, S., R.L. Bras, and I. Rodríguez-Iturbe, "Multidimensional Modeling of Cumulative Rainfall: Parameter Estimation and Model Adequacy through a Continuum of Scales," *Water Resources Research*, 24(7):985-992, 1988.

Tarboton, D.E., R.L. Bras, and I. Rodríguez-Iturbe, "The Fractal Nature of River Networks," *Water Resources Research*, 24(8):1317-1322, 1988.

Jacobs, B.L., I. Rodríguez-Iturbe, and P.S. Eagleson, "Evaluation of a Homogeneous Point Process Description of Arizona Thunderstorm Rainfall," *Water Resources Research*, 24:1174-1186, 1988.

Rodríguez-Iturbe, I. and P.S. Eagleson, "Mathematical Models of Rainstorm Events in Space and Time," *Water Resources Research*, 23(1):181-190, 1987.

Rodríguez-Iturbe, I., D.R. Cox, and V. Isham, "Some Models for Rainfall Based on Stochastic Point Processes," *Proceedings Royal Society of London, Series A*, 410:269-288, 1987.

Eagleson, P.S., N.M. Fennessey, W. Qinliang, and I. Rodríguez-Iturbe, "Application of Spatial Poisson Model to Airmass Thunderstorm Rainfall," *Journal of Geophysical Research (Atmosphere)*, 92(D8):9661-9687, 1987.

Rodríguez-Iturbe, I., Febres de Power, and J.B. Valdés, "Point Process Models for Rainfall: Analysis of Empirical Data," *Journal of Geophysical Research (Atmosphere)*, 92(D8):9645-9656, 1987.

Rodríguez-Iturbe, I., D.R. Cox, and P.S. Eagleson, "Spatial Modeling of Total Storm Rainfall," *Proceedings Royal Society of London, Series A*, 403:27-50, 1986.

- Rodríguez-Iturbe, I, "Scale of Fluctuation of Rainfall Models," Special Issue by Invitation, 25th Anniversary Issue of *Water Resources Research*, 22(9):15S-37S, 1986.
- Córdova, J.R. and I. Rodríguez-Iturbe, "On the Probabilistic Structure of Storm Runoff," *Water Resources Research*, 21(5):755-763, 1985.
- Valdés, J., I. Rodríguez-Iturbe, and V.K. Gupta, "Approximations of Temporal Rainfall from a Multidimensional Model," *Water Resources Research*, 21(8):1259-1270, 1985.
- Waymire, E., V.K. Gupta, and I. Rodríguez-Iturbe, "A Spectral Theory of Rainfall Intensity at the Meso- $\beta$  Scale," *Water Resources Research*, 20(10):1453-1455, 1984.
- Rodríguez-Iturbe, I., V.K. Gupta, and E. Waymire, "Scale Considerations in the Modeling of Temporal Rainfall," *Water Resources Research*, 20(11):1611-1619, 1984.
- Córdova, J.R. and I. Rodríguez-Iturbe, "Geomorphoclimatic Estimation of Extreme Flow Probabilities," *Journal of Hydrology*, 65(3):159-174, 1983.
- Pericchi, L.R. and I. Rodríguez-Iturbe, "On Some Problems in Bayesian Model Choice in Hydrology," *The Statistician*, 32:273-278, 1983.
- Rodríguez-Iturbe, I., M. González, and R.L. Bras, "A Geomorphoclimatic Theory of the Instantaneous Unit Hydrograph," *Water Resources Research*, 18(4):877-886, 1982.
- Rodríguez-Iturbe, I., M. González and G. Camaño, "On the Climate Dependence of the IUH: A Rainfall-Runoff Analysis of the Nash Model and the Geomorphoclimatic Theory," *Water Resources Research*, 18(4):887-903, 1982.
- Rodríguez-Iturbe, I. and L.A. Escobar, "On the Dependence of Rainage Density in Climate and Geomorphology," *Journal of Hydrological Sciences* 27(2):129-137, 1982.
- Escobar, L.A. and I. Rodríguez-Iturbe, "A Modelling Scheme for the Study of Drainage Density," *Water Resources Research*, 18(4):1029-1035, 1982.
- Valdés, J.B., I. Rodríguez-Iturbe, and G.J. Vicens, "Choosing Among Hydrologic Regression Models: 2. Extensions to the Standard Mode," *Water Resources Research*, 16(3):507-516, 1980.
- Valdés, J.B., G.J. Vicens, and I. Rodríguez-Iturbe, "Choosing Among

- Hydrologic Regression Models,” *Water Resources Research*, 15(2):347-358, 1979.
- Wilson, C.G., J.B. Valdés, and I. Rodríguez-Iturbe, “On the Influence of the Spatial Distribution of Rainfall on Storm Runoff,” *Water Resources Research*, 15(2):321-328.
- Rodríguez-Iturbe, I. and J.B. Valdés, “The Geomorphologic Structure of Hydrologic Response,” *Water Resources Research*, 15(6):1409-1420, 1979.
- Valdés, J.B., I. Rodríguez-Iturbe, and Y. Fiallo, “A Rainfall-Runoff Analysis of the Geomorphologic IUH,” *Water Resources Research*, 15(6):1421-1434, 1979.
- Rodríguez-Iturbe, I., Gustavo Devoto, and J.B. Valdés, “Discharge Response Analysis and Hydrologic Similarity: The Interrelation Between the Geomorphologic IUH and the Storm Characteristics,” *Water Resources Research*, 15(6):1435-1444, 1979.
- Valdés, J.B., I. Rodríguez-Iturbe, and G.J. Vicens, “Bayesian Generation of Synthetic Streamflow, Part II: The Multivariate Case,” *Water Resources Research*, 13(2):291-295, 1977.
- Lenton, R.L. and I. Rodríguez-Iturbe, “A Multidimensional Model for the Synthesis of Processes of Areal Rainfall Averages,” *Water Resources Research* 13(3):605-612, 1977.
- Lenton, R.L. and I. Rodríguez-Iturbe, “Rainfall Network System Analysis: The Optimal Estimation of Total Area Storm Depth,” *Water Resources Research*, 13(5):825-834, 1977.
- Bras, R.L. and I. Rodríguez-Iturbe, “Evaluation of Mean Square Error Involved in Approximating the Areal Average of a Rainfall Event by a Discrete Summation,” *Water Resources Research*, 12(2):181-184, 1976.
- Bras, R.L. and I. Rodríguez-Iturbe, “Network Design for the Estimation of the Areal Means of Rainfall Events,” *Water Resources Research*, 12(6):1185-1195, 1976.
- Bras, R.L. and I. Rodríguez-Iturbe, “Rainfall Network Design for Runoff Prediction,” *Water Resources Research*, 12(6):1197-1208, 1976.
- Bras, R.L. and I. Rodríguez-Iturbe, “Rainfall Generation: A Non-Stationary, Time-Varying, Multidimensional Model,” *Water Resources Research*, 12(3):450-455, 1976.
- Vicens, G.J., I. Rodríguez-Iturbe, and J.C. Schaake, “Bayesian Framework for

- the Use of Regional Information in Hydrology,” *Water Resources Research*, 114(3):405-414, 1975.
- Vicens, G.J., I. Rodríguez-Iturbe, and J.C. Schaake, “Bayesian Generation of Synthetic Streamflows,” *Water Resources Research*, 11(6):827-838, 1975.
- Wood, E.F. and I. Rodríguez-Iturbe, “Bayesian Approach to Analyzing Uncertainty Among Flood Frequency Models,” *Water Resources Research*, 11(6):839-843, 1975.
- Wood, E.F. and I. Rodríguez-Iturbe, “Bayesian Inference and Decision Making for Extreme Hydrologic Events,” *Water Resources Research*, 11(4):533-542, 1975.
- Rodríguez-Iturbe, I. and C.F. Nordin, “Frequency Domain Analysis of Hydrologic Systems with Monthly Data,” *Journal of Hydrological Sciences*, pp. 315-329, 1974.
- Mejía, J.M. and I. Rodríguez-Iturbe, “On the Synthesis of Random Fields Sampling from the Spectrum (An Application to the Generation of Hydrological Spatial Processes),” *Water Resources Research* 10(4):705-712, 1974.
- Mejía, J.M. and I. Rodríguez-Iturbe, “Correlations Links Between Normal and Log-Normal Processes,” *Water Resources Research*, 10(4):689-69, 1974.
- Rodríguez-Iturbe, I. and J.M. Mejía, “The Design of Rainfall Networks in Time and Space,” *Water Resources Research*, 10(4):713-728, 1974.
- Lenton, R.L., I. Rodríguez-Iturbe, and J.C. Schaake, “A Bayesian Approach to Autocorrelation Estimation in Hydrologic Autoregressive Models,” *Water Resources Research*, 10(2):227-241, 1974.
- Mejía, J.M., I. Rodríguez-Iturbe, and J.R. Córdova, “Multivariate Generation of Mixtures of Normal and Log-Normal Variables,” *Water Resources Research*, 10(4):691-694, 1974.
- Rodríguez-Iturbe, I. and J.M. Mejía, “On the Transformation of Point Rainfall to Areal Rainfall,” *Water Resources Research*, 10(4):729-736, 1974.
- Rodríguez-Iturbe, I., J.M. Mejía, and R.D. Dawdy, “A Model for Preserving the Covariance Function, Crossing Properties and the Hurst Effect in Long Range Hydrologic Simulation. Part I: A New Look at the Markovian Models, Fractional Gaussian Noise and Crossing Theory,” *Water Resources Research*, 8(4):940-954, 1972.

Mejía, J.M., I. Rodríguez-Iturbe, and R.D. Dawdy, "A Model for Preserving the Covariance Function, Crossing Properties and the Hurst Effect in Long Range Hydrologic Simulation. Part II: The Broken Line Process as a Potential Model for Hydrologic Simulation," *Water Resources Research*, 8(4):940-954, 1972.

Rodríguez-Iturbe, I., D.R. Dawdy, and L. García, "Adequacy of Markovian Model with Cyclic Components for Stochastic Streamflow Simulation," *Water Resources Research*, 7(5):1127-1143, 1971.

Rodríguez-Iturbe, I., "Applications of the Theory of Runs to Hydrology," *Water Resources Research*, 5(6):1422-1427, 1969.

Rodríguez-Iturbe, I. and M.M. Siddiqui, "Coherence Analysis of Stationary Processes with Applications to Hydrology," *Journal of Hydrological Sciences*, pp. 75-99, December 1969.

Rodríguez-Iturbe, I., "Estimation of Statistical Parameters for Annual River Flows," *Water Resources Research*, 5(6):1418-1421, 1969.

Rodríguez-Iturbe, I. and C.F. Nordin, "Some Applications of Cross-Spectral Analysis in Hydrology: Rainfall and Runoff," *Water Resources Research*, 5(3):608-621, 1969.

Rodríguez-Iturbe, I. and C.F. Nordin, "Time Series Analysis of Water and Sediment Discharges," *Journal of Hydrological Science*, 13(2):69-84, 1968.

Rodríguez-Iturbe, I., "A Modern Statistical Study of Monthly Levels of the Orinoco River," *Journal of Hydrological Sciences*, 13(4):25-42, 1968.

### **Papers in Proceedings and Contributions to Books:**

Porporato, A. and I. Rodríguez-Iturbe, "Stochastic soil moisture dynamics and vegetation response", Chapter 2 in "Celebrating Statistics-in Honour of Sir David Cox on his 80th birthday," 55-72, Oxford University Press, 2005.

Caylor, K.K. and I. Rodríguez-Iturbe, "Coupling Ecohydrological Patterns in Semi-Arid Landscapes", in "Hydrology: Science and Practice for the 21st Century", British Hydrological Society, 39-47, London, 2004.

Caylor, K.K., H.H. Shugart, and I. Rodríguez-Iturbe, "Tree Canopy Effects on Simulated Water Stress in Southern African Savannas," Ecological Society of America Meeting, Savannah, GA, 2003.

Rodríguez-Iturbe, I., M.A. Celia and A.J. Guswa, "Climate, Soil and Vegetation: a dynamical perspective of ecohydrology", invited plenary talk,

14th International Conference on Computational Methods in Water Resources, June 2002, Delft, Chapter 47 in *Computational Methods in Water Resources*, S.M. Hassanizadeh, R.J. Schotting, W.G.Gray and G.F.Pinder, Editors, p.1459-1470, Elsevier, 2002.

Daly, E., D'Odorico, P., Porporato, A., Rudolfi, L. and Rodríguez-Iturbe, Un possibile modello idrometeorologico a scala sinottica, *Proceedings 8 Convegno Nazionale di Idraulica*, Potenza, Italia, Vol 2.p.311-318, 2002.

Rinaldo, A. and I. Rodríguez-Iturbe, "Channel Networks," *Annual Review of Earth and Planetary Sciences*, Vol. 26; pp. 289-327, 1998.

Rinaldo, A. and I. Rodríguez-Iturbe, Scaling in River Networks. Chapter 3, pp. 61-87 in: *Scale Dependence and Scale Invariance in Hydrology* (G. Sposito editor), Cambridge Univ. Press, 1998.

Rinaldo, A., A. Maritan, F. Colaiori, A. Flammini, I. Rodríguez-Iturbe, "On feasible optimality," *Proceedings (Atti e Memorie), Istituto Veneto di SLLAA*, Vol. CLV, 57-69, 1997

Rodríguez-Iturbe , I., "Reflections on the 3-Dimensional Structure of River Basins: Its Linkage with Run off Production and Minimum Energy Dissipation," Chapter 9 on *Reflections on Hydrology*, edited by N. Buras, published by American Geophysical Union Press, pp 227-257, 1997.

Maritan, A., J.R. Banavar, A. Flammini, A. Giacometti, A. Rinaldo, I. Rodríguez-Iturbe , "Statistical mechanics of river networks", Invited Paper, in *Statphys 19*, Proceedings of the 19<sup>th</sup> International Conference on Statistical Physics, World Scientific, Singapore, 263-270, 1996

Maritan, A., J.R. Banavar, M. Cieplak, F. Colaiori, a. Flammini, A. Giacometti, A. Rinaldo and I. Rodríguez-Iturbe: "Statistical Mechanics of River Networks," in Proceedings of the 19<sup>th</sup> IUPAP, *Statphys 19*, Xiamen, China, H. Bailin, ed. (World Scientific, 1996).

Rodríguez-Iturbe, I., F. Castelli, D. Entekhabi, G.K. Vogel, A. Rinaldo, "Scaling properties of soil moisture fields," in *Climate Change and Hydrometeorological Hazards in the Mediterranean Area* (Eds. L. Ubertini, F. Castelli, R. Bras), National Research Council, Perugia, 67-76, 1995

Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, "Hydro-Geomorphology Modelling with a Physically Based River Basin Evolution Model," Chapter 13 in *Process Models and Theoretical Geomorphology*, edited by M. J. Kirby, published by John Wiley & Sons, Ltd., pp. 271-293, 1994.

Rodríguez-Iturbe, I., D. Entekhabi, and F. Castelli, "Mutual Interaction of

Soil Moisture State and Atmospheric Processes,” *Proceedings*, NASA Soil Moisture Workshop, Tiburon, California, pp. 21, January 25-27, 1994.

Rodríguez-Iturbe, I., “Possible Impacts of Climate Change on Droughts and Desertification,” *Proceedings*, Symposium “The World at Risk: Natural Hazards and Climate Change”, Massachusetts Institute of Technology, Cambridge, January 1992; also as chapter of AIP Conference Proceedings 277, published by the American Institute of Physics, pp. 96-111, 1993.

Tarboton, D.E., R.L. Bras, and I. Rodríguez-Iturbe, “On the Extraction of Channel Networks from Digital Elevation Data,” Chapter in *Terrain Analysis and Distributed Modelling in Hydrology*, edited by K. Beven and I.D. Moore, published by J. Wiley and Sons, pp. 85-106, 1993.

Rodríguez-Iturbe, I., “The Geomorphological Unit Hydrograph,” Chapter II in *Channel Network Hydrology*, edited by K. Beven and M. Kirkby, John Wiley and Sons, pp. 43-68, 1993.

Islam, S., R.L. Bras, and I. Rodríguez-Iturbe, “Deterministic Signatures in Stochastic Systems with Power Law Spectra,” *Proceedings*, III International Conference on Precipitation Modeling: Hydrological Meteorologic Aspects, College Station, Texas, February 1991.

Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, “Hydro-Geomorphology Modelling with Physically Based River Basin Evolution Model,” *Proceedings*, Symposium in Fluid Geomorphology, University of Leeds, England, September 1991.

Bras, R.L. and I. Rodríguez-Iturbe, “A Review for a Quantitative Link Between Hydrologic Response and Fluvial Geomorphology,” in *New Directions for Surface Water Modelling*, Proceedings, Baltimore Symposium, IAHS Publication No. 181, pp. 748-753, August 1989.

Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, “Modelling of Erosional Impacts of Landuse Change: A New Approach Using a Physically Based Catchment Evolution Model,” *Proceedings*, Hydrology and Water Resources Symposium, Christchurch, New Zealand, November 1989.

Sharifi, M.B., K.P. Georgakakos, and I. Rodríguez-Iturbe, “Chaotic Dynamics in Rainfall and Its Implications for Prediction,” *Proceedings*, Conference on Operational Precipitation Estimation and Prediction, American Meteorological Society, Anaheim, California, 1989.

Cekota, M., J.R. Córdova, and I. Rodríguez-Iturbe, “Construcción de Hidrogramas de Crecientes Para Diversos Períodos de Retorno de Mitigación de Peligros Debido a Eventos Naturales Extremos en América,” *Proceedings*,

Conferencia Internacional Sobre Desastres Naturales, edited by I. Pagan, and L. Rodríguez, Universidad de Puerto Rico, April 1988.

Cox, D.R. and I. Rodríguez-Iturbe, "Some Stochastic Models of Rainfall with Particular Reference to Hydrological Applications," *Proceedings*, Joint Congress of the Society of International Statistics and the Bernoulli Society, Tashkent, URRS, September 1986, Vol. 2, pp. 605-609, VNU Science Press, Utrecht, 1987.

Córdova, J.R., I. Rodríguez-Iturbe, and B. Febres de Power, "Modelaje Matemático del Escurrimiento Superficial a Nivel de Procesos," *Proceedings*, Seminario Latinoamericano en Aprovechamiento de los Recursos Hidráulicos, Chapter 11, pp. 1-36, Facultad Nacional de Minas, Medellín, Colombia, December 1987.

Rodríguez-Iturbe, I., "Scale Problems in Hydrologic Processes," Ponencia Principal, *Proceedings*, IV International Hydrology Symposium, Colorado, July 1985, 12 pp., May 1986.

Caroní, E., I. Rodríguez-Iturbe, and R. Rosso, "Effects of the Averaging Scheme on the Characteristics of the Point Rainfall Process: Theory vs. Real Data," *Proceedings*, II Scientific Assembly, International Association of Hydrological Sciences, July 1986, Budapest, Hungary.

Gupta, V.K., E. Waymire, and I. Rodríguez-Iturbe, "On Scales, Gravity and Network Structure in Predicting Basin Runoff," *Scale Problems in Hydrology: Runoff Generation and Basin Response*, Reidel Publishing Company, Chapter 8, pp. 159-182, March 1986.

Córdova, J.R., I. Rodríguez, and L. Bravo Guenni, "On the Estimation of Mean and Variance of Annual Sediment Yield Based on Watershed and Storm Characteristics," *Proceedings*, IUGG-IAHS Hamburg Symposium, pp. 125-139, 1985.

Pericchi, L.R. and I. Rodríguez-Iturbe, "On the Statistical Analysis of Floods," in *A Celebration of Statistics*, Centenary Volume of the International Statistical Institute, edited by A.C. Atkinson and S.E. Fienberg, Springer-Verlag, Inc., New York, Chapter 23, pp. 511-541, November 1985.

Pericchi, L.R., Seoane, R., and I. Rodríguez-Iturbe, "Some Statistical Methods for Model Choice and Parameter Estimation in Hydrology," *Proceedings*, Sixth National Symposium of Probabilities and Statistics, Federal University of Rio de Janeiro, Brazil, pp. 527-544, 1984.

Rodríguez-Iturbe, I., "Probabilistic Modeling of the Precipitation Process," Ponencia Central, II International Meeting on Statistical Climatology, Lisbon,

*Proceedings*, Vol. pp. 6.1-1; 6.1-7, 1983.

Rodríguez-Iturbe, I., "The Coupling of Climate and Geomorphology in Rainfall-Runoff Analysis," in *Rainfall-Runoff Relationship*, edited by V.P. Singh, Section 8, pp. 431-448, Water Resources Publications, Littleton, Colorado, 582 pp., 1982.

Córdova, J.R., I. Rodríguez-Iturbe, and P. Vaca, "On the Development of Drainage Networks on Recent Developments in the Explanation and Prediction of Erosion and Sediment Yield," publicado en *Recent Developments in the Explanation and Prediction of Erosion and Sediment Yield*, (Proceedings, Exeter Symposium (IAHS), edited by D. Walling, pp. 239-249, 1982.

Rodríguez-Iturbe, I., "Climate and Watershed Development," in *Hydrology, Geomorphology and Climate*, J.B. Valdés, editor, Editorial Equinoccio, pp. 21-72, 1980.

González-Sanabria, M., J.B. Valdés, and I. Rodríguez-Iturbe, "Efectos de Los Esquemas de Generación Sintética en las Curvas de Rendimiento de una Presa," in *Hidrología, Geomorfología and Clima*, J.B. Valdés, editor, Editorial Equinoccio, pp. 181-208, 1980.

Velázquez, J.M., J.B. Valdés, and I. Rodríguez-Iturbe, "Real Time Forecasting of Streamflows: A Self-Adapting Nonlinear Model," *Proceedings*, Third World Congress in Water Resources, Sao Paulo, Brazil, 1978.

Valdés, J.B., J.M. Velázquez, and I. Rodríguez-Iturbe, "Discrimination of Hydrologic Forecasting Models Based on the Kalman Filter," published in *Applications of Kalman Filter to Hydrology, Hydraulics, and Water Resources*, edited by Chao Lin Chiu, University of Pittsburgh Press, pp. 369-384, 1978.

Rodríguez-Iturbe, I., J.B. Valdés, and J.M. Velázquez, "Keynote Lecture on the Applications of Kalman Filter in Rainfall Runoff Studies," published in *Applications of Kalman Filter to Hydrology, Hydraulics, and Water Resources*, edited by Chao Lin Chiu, University of Pittsburgh Press, pp. 233-253, 1978.

Pérez Godoy, J.M. and I. Rodríguez-Iturbe, "Modelo de Predicción de Caudales Para el Río Caroní, Parte I: Predicción a Corto Plazo," *Proceedings*, II Congress of the Venezuelan Society of Hydraulic Engineering, pp. 1-22, 1978.

Pérez-Godoy, J.M. and I. Rodríguez-Iturbe, "Modelo de Predicción de

Caudales Para el Río Caroní, Parte II: Predicción a Largo Plazo,” *Proceedings*, II Congress of the Venezuelan Society of Hydraulic Engineering, pp. 23-39, 1978.

Rodríguez-Iturbe, I., “Rainfall Network Design: It’s Multidimensional Structure,” *Proceedings*, American Geophysical Union Chapman Conference: Design of Hydrologic Data Networks, Arizona, pp. 55-70, 1978.

Valdés, J.B., I. Rodríguez-Iturbe, and G.J. Vicens, “Generación Secuencial de Caudales en Casos de Registros Cortos,” *Proceedings*, United Nations Conference on Water, Buenos Aires, Argentina, March 1977.

Rodríguez-Iturbe, I. and J.M. Pérez Godoy, “Estimación de Creciente and Parámetros de Diseño Con Registros Muy Cortos,” *Proceedings*, United Nations Conference on Water, Buenos Aires, Argentina, March 1977.

Rodríguez-Iturbe, I., “General Report on the Topic Data Network Design,” *Proceedings*, International Symposium on Uncertainties in Hydrologic and Water Resources Systems, Tucson, Arizona, pp. 1457-1475, December 1975.

Rodríguez-Iturbe, I. and N.C. Matalas, “A Statistical View of Parameter Estimation in Multi-Response Hydraulic Systems,” Invited paper, *Proceedings*, SCE Specialty Conference on Probabilistic Methods in Engineering, Stanford University, pp. 24-26, June 1974.

Lenton, R.J., J.C. Schaake, and I. Rodríguez-Iturbe, “Potential Application of Bayesian Techniques for Parameters Estimation with Limited Data,” *Proceedings*, Symposium on Design of Water Resources Programs with Inadequate Data, Madrid, 12 pp., June 1973.

Rodríguez-Iturbe, I., “Stochastic Simulation Techniques and Their Application to Water Resources Problems,” *Proceedings*, Seminar on the Application of Systems Techniques to Water Resources, United Nations, Buenos Aires, Argentina, November 1973.

Rodríguez-Iturbe, I., “Stochastic Models for Synthetic Generation of Hydrologic Data,” *Proceedings*, Seminar on the Application of Systems Techniques to Water Resources, United Nations, Buenos Aires, Argentina, 1973.

Rodríguez-Iturbe, I., “Time Series in Hydrology,” *Proceedings*, Seminar on the Application of Systems Techniques to Water Resources, United Nations, Buenos Aires, Argentina, November 1973.

Rodríguez-Iturbe, I., “Regionalization of Hydrologic Data with Statistical Techniques,” *Proceedings*, Seminar on the Application of Systems Techniques to Water Resources, United Nations, Buenos Aires, Argentina,

November 1973.

Rodríguez-Iturbe, I., "Use of Numerical Filters in Stochastic Simulation," *Proceedings*, Seminar on the Application of Systems Techniques to Water Resources, United Nations, Buenos Aires, Argentina, November 1973.

Rodríguez-Iturbe, I., E.H. Vanmarcke, and J.C. Schaake, "Problems of Analytical Methods in Hydrologic Data Collections," *Proceedings*, Symposium on Uncertainties in Hydrologic and Water Resources Systems, Tucson, Arizona, 4.8; 4.22, December 1972.

Rodríguez-Iturbe, I., J.B. Valdés, R. Lenton, and D. Valencia, "Bayesian Hydrologic Model Building," *Proceedings*, Symposium on Uncertainties in Hydrologic and Water Resources System, Tucson, Arizona, 6.7-1;6.7-15, December 1972.

Grayman, W., B. Harley, D. Marks, I. Rodríguez-Iturbe, and J.C.Schaake, "Integrated Development Plan for Rio Colorado in Argentina," *Proceedings*, Annual Meeting, American Water Resources Association, 10 pp., 1971.

Rodríguez-Iturbe, I., "General Report on the International Symposium on Mathematical Models in Hydrology on the Topic Structural Analysis of Hydrologic Time Series," Warsaw, Poland, *Proceedings*, pp. 1157-1171.

Rodríguez-Iturbe, I. and V. Yevjevich, "Relación Entre la Estacionaridad de Series Hidrológicas y Los Ciclos Existentes en Ellas," *Proceedings*, 4th Latin American Congress of Hydraulics, Mexico, pp. 28-36, 1970.

Rodríguez-Iturbe, I., "Modelo Matemático del Río Orinoco," *Proceedings*, 3rd Latin American Congress of Hydraulics, Buenos Aires, Argentina, 16 pp., 1968.

Rodríguez-Iturbe, I. and V. Yevjevich, "Sunspots and Hydrologic Time Series," *Memorias*, International Hydrologic Symposium, Fort Collins, pp. 397-405, 1967.

**Abstracts:**

Caylor, K.K., Scanlon, T.M., and I. Rodríguez-Iturbe, Ecohydrological optimization of pattern and procession water-limited ecosystems, invited presentation, American Geophysical Union Fall Meeting, San Francisco, December 2006. Abstract in *Proceedings*.

Botter, E., Porporato, A., Daly, E., Rodriguez-Itrube, I., and A. Rinaldo, On the probabilistic characterization of base flows in river basins, American Geophysical Union, December 2006, *Proceedings* Fall Meeting.

S. Manfreda and I. Rodríguez-Iturbe “On the spatial and temporal sampling of soil moisture fields” American Geophysical Union meeting, San Francisco, December 2005.

M.J. Puma, I. Rodríguez-Iturbe, M.A. Celia, J.M. Nordbotten, N.J. Guswa “Effects of Spatial Heterogeneity in Rainfall and Vegetation on the Space-Time Scaling of Soil Moisture and Evapotranspiration” American Geophysical Union meeting, San Francisco, December 2005.

A. Porporato, J. Rigby, J. Daly, I. Rodríguez-Iturbe “Stochastic Models of Pulse-Reserve Dynamics in Water-Limited Ecosystems” American Geophysical Union meeting, San Francisco, December 2005.

Shugart, H.H., K. K. Caylor, T.M. Scanlon, I. Rodríguez-Iturbe, "Assessing the role of spatial pattern in governing ecohydrological interactions and vegetations dynamics in semi-arid savannas," Oral presentation, American Geophysical Union meeting, San Francisco, December 2003, Abstract published in *EOS Tran. AGU* 84(46), Fall Meet. Suppl., Abstract B51A-07, 2003.

Manfreda, S., K. Caylor, and I. Rodríguez-Iturbe, "On the soil moisture dynamics: Does simplification alter soil moisture prediction?" Poster presentation, American Geophysical Union Meeting, San Francisco, December 2003, Abstract published in *EOS Trans.*, AGU 84(46), Fall Meet, Suppl., Abstract H42D-1109, 2003.

Caylor, K.K., S. Manfreda, and I. Rodríguez-Iturbe, "On the coupled geomorphological and ecohydrological organization of river basins," American Geophysical Union meeting, San Francisco, December 2003, Abstract published in *EOS Trans. AGU* 84(46), Fall Meet. Suppl.

Laio, F., A. Porporato, L. Ridolfi, and I. Rodríguez-Iturbe (2001) “Seasonal control on the unsteady dynamics of mean soil moisture”, European Geophysical Society XXVI General Assembly, Nice. Abstract in *GRA*, March 2001.

Guswa, A. J., M. A. Celia and I. Rodríguez-Iturbe, “Comparison of Infiltration Models for Evaluating Vegetation Stress in Water-Controlled Ecosystems.” Spring Meeting, American Geophysical Union, Boston. Abstract in *EOS*, June 2001.

Fernandez-Illescas, C. P. and I. Rodríguez-Iturbe, “The Ecohydrological Importance of Soil Texture in Water-Limited Ecosystems.” Spring Meeting, American Geophysical Union, Boston. Abstract in *EOS*, June 2001.

Fernandez-Illescas, C. P. and I. Rodríguez-Iturbe, “Hydrologically Driven

Hierarchical Competition-Colonization Model: The Impact of Random Interannual Climate Fluctuations”, (Invited). Spring Meeting, American Geophysical Union, Boston. Abstract in *EOS*, June 2001.

Porporato A., F. Laio, L. Ridolfi, K. Caylor, and I. Rodríguez-Iturbe, (2001) Soil moisture and plant stress dynamics along the Kalahari precipitation gradient”. Abstract in *EOS Trans.* American Geophysical Union, November 2001.

Porporato A., P. D'Odorico, F. Laio, and I. Rodríguez-Iturbe (2001) “Water balance and soil nitrogen cycle: fluctuations at different time scales”. Abstract in *EOS Trans.* American Geophysical Union, November 2001 (Invited).

Fernandez-Illescas, C. P. and I. Rodríguez-Iturbe, “Spatial and Temporal Patterns of Vegetation in Water Limited Ecosystems: The Role of Interannual Rainfall Variability”, Invited presentation, American Geophysical Union meeting, San Francisco, December 2001. Abstract published in *EOS*, November 2001.

Porporato A., K.K. Caylor, F. Laio, L. Ridolfi, and I. Rodríguez-Iturbe, “Soil Moisture and Plant Stress Dynamics along the Kalahari Precipitation Gradient”, Poster presentation, American Geophysical Union meeting, San Francisco, December 2001. Abstract published in *EOS*, November 2001.

Rodríguez-Iturbe, I., Langbein Lecture: “Hydrologic Sciences Tomorrow: Complexity and Self-Organization in Ecohydrology,” Abstract in *EOS*, May 20, 2000.

Laio, F., A. Poporato, L. Ridolfi, I. Rodríguez-Iturbe, “Transient Soil-Moisture Dynamics and the Selection of Temporal Niches for Vegetation,” Spring Meeting 2000, American Geophysical Union, Abstract in *EOS*, May 2000.

Porporato, A., F. Laio, L. Ridolfi, and I. Rodríguez-Iturbe (2000) “Hydrologic Control of Vegetation Water Stress,” Spring Meeting 2000, American Geophysical Union, Abstract in *EOS Trans.*, May 2000.

“Hydrology in the 20<sup>th</sup> Century: lessons from the past and challenges for the future”. Invited presentation. European Geophysical Society (EGS) XXV General Assembly, Nice, France, April 2000.

D'Odorico P., L. Ridolfi, A. Porporato, and I. Rodríguez-Iturbe, “Biogenic nitrogen oxides emission from plant ecosystems to the atmosphere: the role of soil moisture dynamics.” Spring Meeting, American Geophysical Union, Washington. Abstract in *EOS*, May 9, 2000.

Laio, F., A. Porporato, L. Ridolfi, and I. Rodríguez-Iturbe (2000) “Transient soil moisture dynamics and the selection of temporal niches for vegetation.” Spring Meeting, American Geophysical Union, Washington. Abstract in *EOS Trans*, AGU, May 9, 2000.

Porporato A., F. Laio, L. Ridolfi, and I. Rodríguez-Iturbe, “Hydrologic control of vegetation water stress.” Spring Meeting, American Geophysical Union, Washington. Abstract in *EOS*, May 9, 2000.

Porporato, A., P. D’Odorico, L. Ridolfi, and I. Rodríguez-Iturbe (2000) Pattern forming instabilities in soil atmosphere interaction. Fall Meeting, American Geophysical Union, San Francisco. Abstract in *EOS Trans.*, **82** (20), Nov. 2000.

Rodríguez-Iturbe I., F. Laio, A. Porporato and L. Ridolfi, (2000) “Intensive or extensive use of soil moisture: plant strategies to cope with stochastic water availability.” Fall Meeting, American Geophysical Union, San Francisco. Abstract in *EOS Trans*. AGU, November 2000. (Invited).

Porporato, A., P. D’Odorico, L. Ridolfi, I. Rodríguez-Iturbe, “Interannual Hydrologic Fluctuations in Water-Limited Ecosystems,” Fall Meeting, American Geophysical Union, Abstract in *EOS*, November 16, 1999.

Rodríguez-Iturbe, I., P. D’Odorico, A. Porporato and L. Ridolfi, “Point and Spatial Moisture Dynamics: The Role of Climate, Soil and Vegetation,” Invited paper, Fall Meeting, American Geophysical Union, Abstract in *EOS*, San Francisco, December 12, 1998.

D’Odorico, P., A. Poporato, L. Ridolfi and I. Rodríguez-Iturbe, “Soil Water Content, Climate Fluctuations and Vegetation Patterns,” Fall Meeting, American Geophysical Union, Abstract in *EOS*, December 12, 1998.

Liu, O., S. Islam, and I. Rodríguez-Iturbe, “Linearity, Nonlinearity, and Noise in Streamflow Dynamics,” Spring Meeting, American Geophysical Union, Abstracts in *EOS*, Baltimore Convention Center, Baltimore, Maryland, May 30 - June 2, 1995.

Rodríguez-Iturbe, I., G. Vogel, R. Rigon, “On the Spatial Organization of Soil Moisture Fields,” Invited Paper, Spring Meeting, American Geophysical Union, Abstracts in *EOS*, Baltimore Convention Center, Baltimore, Maryland, May 30 - June 2, 1995.

Rinaldo, A., G. Vogel, R. Rigon, I. Rodríguez-Iturbe, “Can One Gauge the Shape of a Basin? Geomorphology, Heterogeneous Dynamics and the Hydrologic Response,” Invited Paper, Spring Meeting, American Geophysical Union, Abstracts in *EOS*, Baltimore Convention Center,

Baltimore, Maryland, May 30 - June 2, 1995.

Rinaldo, A. and I Rodríguez-Iturbe, "From Topologically Random to Optimal Channel Networks," Invited Paper, Fall Meeting, American Geophysical Union, Abstract in *EOS*, San Francisco, December 15, 1995.

Rodríguez-Iturbe, I. and A. Rinaldo, "On the Role of Chance and Self-Organization in the Structure of River Basins." Invited Paper, All-Union Session on "Global Coherence and Cross-Scale Coupling in Geophysical Systems." American Geophysical Union 75th Anniversary Meeting, Baltimore, Maryland, May, 1994. Abstract in *EOS*, May 1994.

Entekhabi, D., I. Rodríguez-Iturbe, R. Scott, and F. Castelli, "Two-Way Land-Atmosphere Interaction and the Time-Scales of Persistent Anomalies in Continental Climates," Workshop on *Climate Change and Hydrogeological Hazards in the Mediterranean Area*, Villa La Colombella, Perugia, Italy, 1994.

Dietrich, W. E., A. Rinaldo, R. Rigon, G. Vogel, and I. Rodríguez-Iturbe, "Climate Impacts on Landscape Self-Organization," Workshop on *Climate Change and Hydrogeological Hazards in the Mediterranean Area*, Villa La Colombella, Perugia, Italy, 1994.

Rinaldo, Andrea, I. Rodríguez-Iturbe, W. E. Dietrich, R. Rigon, and G. Vogel, "Climatic Signatures on Geomorphology: Climate Changes, Forms, and Processes," Workshop on *Climate Change and Hydrogeological Hazards in the Mediterranean Area*, Villa La Colombella, Perugia, Italy, June 27-28, 1994.

Rodríguez-Iturbe, I., J. Liu, F. Castelli, and D. Entekhabi, "The Spatial Signature of Coupled Soil Moisture and Atmosphere Interaction," Workshop on *Climate Change and Hydrogeological Hazards in the Mediterranean Area*, Villa La Colombella, Perugia, Italy, 1994.

Ijjasz-Vasquez, E.J., R.L. Bras, I. Rodríguez-Iturbe, R. Rigon, and A. Rinaldo, "Are River Basins Optimal Channel Networks?," in Workshop on *Nonlinearities, Fractals and Chaos in Hydrology*. International Association of Hydrological Sciences, Japan, July 1993.

Bras, R.L., E.J. Ijjasz-Vasquez, A. Rinaldo, R. Rigon, and I. Rodríguez-Iturbe, "Fractals, Multifractals and the Optimization of Energy Expenditure in River Basins," in *Fractal Geometry, Self-Organized Criticality, Chaos Theory and Their Application in the Earth Sciences*. Geological Society of America, Annual Meeting, Boston, October 1993.

Rigon, R., I. Rodríguez-Iturbe, A. Rinaldo, E. Ijjasz-Vasquez, R.L. Bras, and

G.E. Moglen, "Optimal Channel Networks: Fractal and Multifractal Structures," in *Workshop (HW6) on Nonlinearities, Fractals and Chaos in Hydrology*. International Association of Hydrological Sciences, Yokohama, July 1993.

Rinaldo, A., I. Rodríguez-Iturbe, R. Rigon, E. Ijjasz-Vasquez, and R.L. Bras, "Self-Organized Fractal River Networks," in *Workshop (HW6) on Nonlinearities, Fractals and Chaos in Hydrology*. International Association of Hydrological Sciences, Yokohama, July 1993.

Ijjasz-Vasquez, E.J., I. Rodríguez-Iturbe, and R.L. Bras, "On the Multifractal Characterization of River Basins," in *23rd Binghamton Symposium in Geomorphology*, September 1992.

Rinaldo, A., R. Rigon, I. Rodríguez-Iturbe, R.L. Bras, and E.J. Ijjasz-Vasquez, "Optimal Channel Networks: A Framework for the Study of River Basin Morphology," in *Hillslope Processes*, 1992 Fall Meeting, American Geophysical Union.

Rodríguez-Iturbe, I., D. Entekhabi, and R.L. Bras, "Nonlinear Dynamics of The Water Balance Equation: Fixed-Points, Limit-Cycles and the Transition to Chaos," Spring Meeting, American Geophysical Union, Abstracts in *EOS*, May 1992.

Entekhabi, D., I. Rodríguez-Iturbe, and R.L. Bras, "Dynamical and Statistical Behavior of Large-Scale Water Balance Including Land Surface-Atmosphere Interaction," Spring Meeting, American Geophysical Union, Abstracts in *EOS*, May 1992.

Rinaldo, A., R. Rigon, I. Rodríguez-Iturbe, R.L. Bras, and E.J. Ijjasz-Vasquez, "Optimal Channel Networks: A Framework for the Study of River Basin Morphology," American Geophysical Union, Abstracts in *EOS*, 73(43):228. Presented at San Francisco, December 1992.

Ijjasz-Vasquez, E.J., R.L. Bras, and I. Rodríguez-Iturbe, "Self-Organized Criticality in River Basins," in *Self-Similarity in Hydrologic Processes*, 1991 Fall Meeting, American Geophysical Union.

Rodríguez-Iturbe, I., E. J. Ijjasz-Vasquez, and R.L. Bras, "The Multifractal Characterization of Mass and Energy in River Basins," in *Self-Similarity in Hydrology Processes*, 1991 Fall Meeting, American Geophysical Union.

Rodríguez-Iturbe, I., E. Ijjasz-Vasquez, and R.L. Bras, "The Multifractal Characterization of Mass and Energy in River Basin," Fall Meeting, American Geophysical Union, Abstracts in *EOS*, Transactions of the American Geophysical Union, October 1991.

- E. Ijjasz-Vasquez, R.L. Bras, and I. Rodríguez-Iturbe, "Self-Organized Criticality in River Basins," Fall Meeting, American Geophysical Union, Abstracts in *EOS*, October 1991.
- D. Entekhabi, I. Rodríguez-Iturbe, and R.L. Bras, "The Analysis of Droughts in a Model of Large-Scale Water Balance with Land Surface-Atmosphere Interaction," Fall Meeting, American Geophysical Union, Abstracts in *EOS*, October 1991.
- Bras, R.L., I. Rodríguez-Iturbe, G. Willgoose, and D. Tarboton, "Quantitative Fluvial Geomorphology: Where We Are and Where We Are Going," Invited Paper, Gilbert Club - East Meeting, June 1990.
- Willgoose, G., R.L. Bras, and I. Rodríguez-Iturbe, "Scale Dependencies in Landscapes," Invited Paper, Spring Meeting, American Geophysical Union, Baltimore, May 1990.
- Tarboton, D.E., R.L. Bras, and I. Rodríguez-Iturbe, "A Physical Basis for Drainage Density," Spring Meeting, American Geophysical Union, Baltimore, May 1990.
- Bras, R.L. and I. Rodríguez-Iturbe, "A Review of the Search for the Quantitative Link Between Hydrologic Response and Fluvial Geomorphology," Invited Paper, IAHS Baltimore Symposium, May 1989.
- Tarboton, D.E., R.L. Bras, and I. Rodríguez-Iturbe, "River Networks and Landform Scale from DEM's," American Geophysical Journal, San Francisco, 1989.
- Bras, R.L. and I. Rodríguez-Iturbe, "Hydrology and Fluvial Geomorphology," Invited Paper, Front Range American Geophysical Union Meeting, Colorado School of Mines, Golden, Colorado, February 11-12, 1988.
- Tarboton, D.E., R. L. Bras, and I. Rodríguez-Iturbe, "Scale Versus Scaling in River Basin Geomorphology," American Geophysical Union, Abstract in *EOS*, 69(16):344, 1988.
- Willgoose, G.R., R.L. Bras, and I. Rodríguez-Iturbe, "A Mathematical Model of River Network Growth," Invited Paper, American Geophysical Union, Abstract in *EOS*, 69(16):345, 1988.
- Willgoose, G.R., R.L. Bras, and I. Rodríguez-Iturbe, "Sensitivity to Rate Constants in a Physically Based Catchment Model," American Geophysical Union, Abstract in *EOS*, 69(44):1224, San Francisco, November 1988.
- Rodríguez-Iturbe, I., "Critical and Emerging Areas in the Hydrologic

Sciences,” Invited Paper, American Geophysical Union, Abstract in *EOS*, 69:1044, November 1988.

Tarboton, D.E., R.L. Bras, and I. Rodríguez-Iturbe, “The Organization of Runoff Generating Areas,” American Geophysical Union, Abstract in *EOS*, 68(44):1276, December 1987.

Willgoose, G., I. Rodríguez-Iturbe, and R.L. Bras, “Channel Networks: A Physical Based Model for Network Development,” American Geophysical Union, Abstract in *EOS*, 68(44):1272, December 1987.

Willgoose, G., I. Rodríguez-Iturbe, and R.L. Bras, “Channel Networks: A Physically Based Model for Network Development,” American Geophysical Union, December 1987.

Rodríguez-Iturbe, I. and R.L. Bras, “Speculations on the Architecture of the Drainage Network and the Organization of Runoff Production in a Basin: Are There Any Common Links in Unifying Principles?,” Invited Paper, American Geophysical Union, December 1987.

Tarboton, D.E., R.L. Bras, and I. Rodríguez-Iturbe, “The Organization of Runoff Generation Areas,” Reunión American Geophysical Union, December 1987.

Valdés, J.B., I. Rodríguez-Iturbe, and V.K. Gupta, Invited Paper, “Symposium on Investigations on Mesoscale Precipitation Fields,” American Geophysical Union, Abstract in *EOS*, 65(16):209, May 1984.

González-Sanabria, M., I. Rodríguez-Iturbe, and V.K. Gupta, “Rainfall Clustering and the Basin Response: Their Interactive Role on the Streamflow Structure,” Invited Paper, American Geophysical Union, May 1982.

Valdés, J.B., V.K. Gupta and I. Rodríguez-Iturbe, “Space and Rainfall Simulation: A Physically Based Point Process Approach,” Invited Paper, American Geophysical Union, May 1982.

González-Sanabria, M., J.B. Valdés, and I. Rodríguez-Iturbe, “A Bayesian Approach to Storage-Yield Analysis,” Annual Meeting, American Geophysical Union, Toronto, Canada, May 1980.

González-Sanabria, M., J.B. Valdés, and I. Rodríguez-Iturbe, “Analysis of the Intertropical Convergence Zone Effects by Demodulation of Hydrologic Monthly Records in Venezuela,” Annual Meeting, American Geophysical Union, Washington, DC, May 1979.

Pericchi, L.R., J.B. Valdés, and I. Rodríguez-Iturbe, “A Comprehensive

Approach to Data Transformation in Hydrologic Regressions,” Annual Meeting, American Geophysical Union, December 1979.

Valdés, J.B., J.M. Velázquez, and I. Rodríguez-Iturbe, “Kalman Filtering Theory and Selection of Streamflow Forecasting Models,” *Proceedings*, Fall Meeting, American Geophysical Union, December 1977.

Rodríguez-Iturbe, I., “On the Optimum Use of Hydrologic Information,” Invited Paper, AGU Symposium on Hydrologic Systems Analysis Aspects of Water Resources Planning, San Francisco, December 1974.

Mejía, J.M., I. Rodríguez-Iturbe and D.R. Dawdy, “A Broken-Line for Simulating Geophysical Time Series,” paper presented at the 1971 Fall Meeting of the American Geophysical Union, Washington, D.C., 1971. Abstract published in *Transactions* of the American Geophysical Union, October 1971.

Dawdy, D.R. and I. Rodríguez-Iturbe, “Conceptions in Hydrology,” Invited Paper presented at the 52nd Annual Meeting of the American Geophysical Union. Abstract published in *Transactions* of the American Physical Union, February 1971.