

## **S. GEORGE PHILANDER**

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### **EDUCATION**

Bachelor of Science Degree, University of Cape Town (South Africa), 1962.  
Ph.D. Degree, Harvard University, 1970.

### **EMPLOYMENT**

1970-1971 Postdoctoral Fellow, Department of Meteorology, MIT, Cambridge,  
1971-1977 Research Associate, Geophysical Fluid Dynamics Program, Princeton University, Princeton, NJ  
1973-1977 Consultant to World Meteorological Organization, Geneva, Switzerland.  
1978-1989 Senior Research Oceanographer, Geophysical Fluid Dynamics Lab. NOAA, Princeton, NJ  
1982 Visiting Professor, Museum National d'Histoire Naturelle, Paris  
1990- Professor of Geosciences, Princeton University, Princeton, NJ  
1990-2006 Director of the Program in Atmospheric and Oceanic Sciences, Princeton .  
1994-2001 Chairman, Department of Geosciences, Princeton University.  
2002 Gordon Moore Scholar, California Institute of Technology.  
2005- Knox Taylor Professor of Geosciences at Princeton University  
2007- 2010 Research Professor University of Cape Town, South Africa  
2007- 2010 Research Director, African Centre for Climate and  
Earth System Science (ACCESS) Cape Town, South Africa.  
2017 -- Knox-Taylor Professor Emeritus, Princeton University

### **RECENT MEMBERSHIP ON COMMITTEES AND PANELS**

Member of the Council of the International Center for Theoretical Physics, Trieste, Italy;  
Member of the Board of ACCESS (Africa Centre for Climate and Earth System Studies);  
Member of the Committee on Science and Arts of the Franklin Institute, Philadelphia; Member  
of Commission on Geosciences, Environment and Resources (of the National Academy of  
Sciences, U.S.A.); Member of evaluation committees for departments of geosciences at  
Columbia Univ., Tulane Univ., Univ. of Copenhagen (Denmark), Texas A&M University,  
Woods Hole Oceanographic Institution, MIT, National Center for Atmospheric Research  
(Boulder, Co.), Univ of Kyoto (Japan) CSIR (South Africa); Yale University; Member of the  
editorial boards of scientific journals including "Annual Review of Earth and Planetary  
Sciences", "Dynamics of Atmospheres and Oceans", "Geofisica Internacional", "Oceanographie  
Tropicale"; Member of committees to organize and steer various international  
atmospheric/oceanic projects.

## **AWARDS**

NOAA Environmental Research Laboratories, Distinguished Authorship Award (1979, 1983)  
Sverdrup Gold Medal of the American Meteorological Society (1985)  
Department of Commerce Gold Medal (1985)  
Fellow of the American Meteorological Society (1986)  
Fellow of the American Geophysical Union (1991)  
Symons Memorial Lecturer of the Royal Meteorological Society U.K. (1994)  
Fellow of the American Academy of Arts and Sciences (2003)  
Member of the National Academy of Sciences (USA) (2004).  
President's Lecture, C.S.I.R. Pretoria, South Africa 2007  
Victor Starr Memorial Lecture, M.I.T. Cambridge, Mass. U.S.A. 2007  
Doctor of Science (Honoris causa) Univ. of Cape Town 2007.  
Fellow of TWAS (Third World Academy of Sciences) 2008  
Fellow of Academy of Science of South Africa 2010  
Eugene Rasmuson Lectureship, University of Maryland (2012).  
Annual Ludwig Lecture, Old Dominion University, 2014  
Priestly Lecture, CSIR, Melbourne, Australia, 2015  
Honorary Doctor of Marine Science, University of South Florida 2016  
Vetlesen Prize Columbia University and G. Unger Vetlesen Foundation 2017

## **PUBLICATIONS**

### **Books**

El Niño, La Niña and the Southern Oscillation, 289 pp., Academic Press, 1990.  
Is the Temperature Rising? *The Uncertain Science of Global Warming*  
254 pp., Princeton University Press, 1998.  
Our Affair with El Niño. *How we Transformed an Enchanting Peruvian Current  
into a Global Climate Hazard.* 275pp; Princeton University Press, 2004.  
Editor of "Encyclopedia of Global Warming and Climate Change"  
3 volumes, Sage Publications Ltd. Calif. 1<sup>st</sup> Edition: 2008; 2<sup>nd</sup> Edition: 2012

### **Chapters in Books**

Moore D.W. and Philander, S. G. H., Modeling of the Tropical Oceanic Circulation  
The Sea, Chapter 8, E. D. Goldberg (ed.), J. Marine Res., 35(3), 509-523, 1977.

Delecluse, P., and S. G. H. Philander, Variability of Coastal Zones in Low Latitudes  
Hydrodynamics of the Equatorial Ocean, Elsevier, pp. 219-235, 1983.

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in Advances in Geophysics (28), A. Climate Dynamics, B. Saltzman (ed.),  
Academic Press, New York, 461-475, 1985.

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in Advances in Geophysics (28), A. Climate Dynamics,  
B. Saltzman (Ed.), Academic Press, New York, 197-213, 1985.

Philander, S.G.H., General Circulation Models of the Ocean, in  
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Meteorological Society, Bracknell, 1987.

Philander, S.G.H., Ocean-Atmosphere Interactions in the tropics. In  
"Modelling Oceanic Climate Interactions", J. Willebrand,  
D.L.T. Anderson (Ed) pp. 35-66, Springer Verlag, 1993.

Gu D. and S.G.H. Philander, A Theory for Interdecadal Climate Fluctuations. In "Beyond El Niño" A. Navarra (Ed) pp 301-308, Springer, 1999.

Liu Z. and S.G.H. Philander, Tropical-Extratropical Oceanic Exchange Pathways In "Ocean Circulation and Climate" G. Siedler, J. Church and J. Gould (Ed) pp 247-258, Academic Press, 2001.

Philander S.G. Sextant to Satellite; the Education of a Land-based Oceanographer In *History of Physical Oceanography - Developments since 1960* M. Jochum and R. Martugudde (Ed). Publisher Springer/New York 2006.

## Articles in Refereed Journals

Philander, S. G. H., On the Flow Properties of a Fluid Between Concentric Spheres, J. Fluid Mechanics, 47, 799-809, 1971.

Philander, S. G. H., The Equatorial Dynamics of a Shallow Homogeneous Ocean, Geophys. Fluid Dynamics Journal, 2, 219-245, 1971.

Philander, S. G. H., The Equatorial Dynamics of a Deep Homogeneous Ocean, Geophys. Fluid Dynamics Journal, 3, 105-123, 1972.

Philander, S. G. H., The Equatorial Thermocline, Deep Sea Res., 20(1), 69-86, 1973.

Philander, S. G. H., The Equatorial Undercurrent: Measurements and Theories, Rev. Geophys. and Space Physics, 11(3), 513-570, 1973.

Philander, S. G. H., The Oceanographic Subprogramme of GATE, Bull. Am. Met. Soc., 55, 738-744, 1974.

Philander, S. G. H., Report on the Field Phase of the Oceanographic Subprogramme of GATE Report 16, World Meteorological Organization, Geneva, 9.1-9.81, 1975.

Duing, W., P. Hisard, E. Katz, J. Knauss, J. Meincke, K. Moroshkin, S. G. H. Philander, A. Rybnikov, and K. Voight, Meanders and Long Waves in the Equatorial Atlantic, Nature (London), 257, 280-284, 1975.

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Philander, S. G. H., Instabilities of Zonal Equatorial Currents, 2, J. Geophys. Res., 83(C7), 3679-3682, 1978.

Philander, S. G. H., Upwelling in the Gulf of Guinea, J. Marine Res., 37(1), 23-33, 1979.

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- Philander, S. G. H., Variability of the Tropical Oceans, Dynamics of Atmospheric and Oceans, 3, 191-208, 1979.
- Philander, S. G. H., and R. C. Pacanowski, The Generation of Equatorial Currents, J. Geophys. Res., 85(C2), 1123-1136, 1980.
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- Philander, S.G.H., R.C. Pacanowski, N.-G. Lau, and M.J. Nath, Simulations of ENSO with a Global Atmospheric GCM Coupled to a High-Resolution Tropical Pacific Ocean Journal of Climate, 5, 308-329, 1992.
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- Philander, S.G.H., Ocean-Atmosphere Interactions in the Tropics: A Review of Recent Theories and Models, Applied Meteorology, 31, 938-945, 1992.
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- Liu, Z., S.G.H. Philander and R.C. Pacanowski, A GCM study of subtropical - tropical upper ocean mass exchange, J. of Phys. Oceanogr., Vol. 24, No. 12, 2606-2623, 1994.
- Chang, P. and S.G.H. Philander, A coupled ocean-atmosphere instability of relevance to the seasonal cycle, J. of Climate, Vol. 51, No. 24, 3627-3648, 1994.
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- Xie, S. and S.G.H. Philander, A coupled ocean-atmosphere model of relevance to the ITCZ in the eastern Pacific. Tellus, 46A, 340-350, 1994.
- Liu, Z., and S.G.H. Philander, How different Wind-Stress patterns affect the tropical-subtropical Circulation of the upper ocean, J. Phys. Oceanogr., 25, 449-462, 1995.
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- Gu, Daifang and S.G.H. Philander, Secular Changes of Annual and Interannual Variability in the Tropics during the Past Century J. of Climate, Vol. 8, No. 4, 864-876, 1995.
- Li, Tianming and S.G.H. Philander, On the Annual Cycle of the Eastern Equatorial Pacific, J. of Climate, Vol. 9, No. 12, 2986-2998, 1996.
- S.G.H. Philander, D. Gu, D. Halpern, G. Lambert, N.-C. Lau, T. Li and R.C. Pacanowski, The role of low-level stratus clouds in keeping the ITCZ mostly north of the equator, J. of Climate, Vol. 9, No. 12, 2958-2972, 1996.
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In "Numerical Simulations in the Environmental and Earth Sciences"

Editors: F. Garcia Garcia, A. Fernandez-Eguiarte, R. Alvarez, G.Cisneros. Cambridge University Press 1996.

Gu, D., S.G.H. Philander and M. McPhaden, The seasonal cycle and Its Modulation in the Eastern Tropic Pacific Ocean, *J. Phys. Oceanogr.*, 27, 2209-2218, 1997.

Gu D. and S.G.H. Philander, Interdecadal Climate Fluctuations that depend on Exchanges between the Tropics and Extratropics, *Science*, 275, 805-807, 1997.

Li, T. and S.G.H. Philander, On the Seasonal cycle of the equatorial Atlantic Ocean, *J. of Climate*, 10, 813-817, 1997.

Bush, A. and S.G.H. Philander, The role of ocean-atmosphere interactions on tropical sea surface temperatures during the last glacial maximum, *Science*, 279, 1341-1344, 1998.

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Bush, A.B.G. and S.G.H. Philander: The climate of the Last Glacial Maximum: Results from a coupled atmosphere-ocean general circulation model. *J. Geophys. Res.* 104, 24, 509-524, 1999

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variability in the tropics. Dynamics of Atmospheres and Oceans 39, 3-19, 2005.

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Science 312, 1485-1489, 2006

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Pliocene atmospheres. Climate Dynamics 26, 349-365, 2006.

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Effects on the Thermohaline and Wind-driven Circulations. J. Physical Oceanography 37(4), 896-907, 2007.

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Climate Dynamics 31, 713-729, 2008

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