

Biography

University training

- Studies of Physics, Mathematics and Geophysics at Kiel University, 1953 – 1960
- Dr. rer. nat., Physics, Kiel University, 1960
- Habilitation, Oceanography and Geophysics, Kiel University, 1966

Professional positions

- Research Scientist, Institut für Meereskunde, Kiel, Germany, 1960 – 1998
- Director of Marine Physics Dept., Institut für Meereskunde, Kiel, 1969 – 1998
- Professor of Physical Oceanography, Kiel University, from 1969
- Director of Institut für Meereskunde, Kiel University, 1976 – 1978
- Dean of Faculty of Mathematics and Sciences, Kiel University, 1991 – 1992
- Emeritus Professor, Institut für Meereskunde, Kiel, Germany, from 1998
(Leibniz Institute of Marine Sciences Kiel, from 2004;
Helmholtz Centre for Ocean Research Kiel, from 2012)

Visiting appointments

- Woods Hole Oceanographic Institution (WHOI), U.S.A., 1967 – 1968, 1971 – 1972, 1983
- Visiting Associate Professor, Joint Graduate Student Program, Massachusetts Institute of Technology (MIT) and WHOI, U.S.A., 1968
- Joint Institute for Marine and Atmospheric Research, University of Hawaii, U.S.A., 1984, 1985 and 1994
- LODYC, Université Pierre et Marie Curie, Paris, France, 1989
- CIMAS, University of Miami and NOAA/AOML, U.S.A., 1990
- NASA Jet Propulsion Laboratory, Pasadena, U.S.A., 1990
- Laboratoire de Physique des Océans, IFREMER, Centre de Brest, France, 1994
- Universidad de Concepción, Chile, 1998
- Institute of Marine Sciences (ICCM), Telde, Spain, 1998-2000
- Visiting Professor, International Pacific Research Center, University of Hawaii, U.S.A., 2000
- Alexander-von-Humboldt Researcher, University of Cape Town, South Africa, 2005, 2006, 2007

Teaching in physical oceanography

- Kiel University, Germany (1966 - 1998).
- WHOI/MIT, U.S.A. (1968).
- International Centre for Theoretical Physics, Trieste, Italy, International Course on the Physics of Oceans and Atmosphere (1975).
- Hamburg University, Germany (1976/77).
- Diretoria de Hidrografia e Navegação, Rio de Janeiro, Brazil: Course on "Management in Marine Science" (1980).
- Universidad de la Laguna, Cursos Internacionales de Verano, Yaiza, Lanzarote, Spain

(1992).

- Universidad de Las Palmas de Gran Canaria, Curso de Invierno, Las Palmas, Gran Canaria, Spain (1998).
- Universidad de Concepción, Chile: Curso Internacional de Postgrado en Oceanografía (1998).

International appointments

- *Scientific Committee on Oceanic Research (SCOR) of the International Council of Science (ICSU):*
 - Working Group 21 "Current meter intercomparison"*
Member 1966 – 1974
 - Working Group 34 "Internal dynamics of the ocean"*
Member 1976 – 1982
 - Working Group 43 "Oceanography related to the GARP Atlantic Tropical Experiment (GATE)",*
Chair 1972 – 1978
 - SCOR Vicepresident 1980 – 1983
 - SCOR President 1983 – 1988
 - SCOR Past-President 1988 - 1992
- *International Association for the Physical Sciences of the Oceans (IAPSO) of the International Union of Geodesy and Geophysics (IUGG):*
Vicepresident 1975 - 1979
- *Comité Scientifique du Programme National d'Etude de la Dynamique du Climat, France:*
Member 1988 – 1992
- *Scientific Steering Group of the "World Ocean Circulation Experiment" (WOCE):*
Member of the Executive, 1989 - 1993
- *Woods Hole Oceanographic Institution, USA:*
Visiting Committee Member 1992
- *European Commission, Brussels, Mid-Term Evaluation Panel, Marine Science and Technology Program:*
Member 1995

National appointments

- *Deutsche Forschungsgemeinschaft (DFG, German Research Foundation):*
 - Senatskommission für Wasserforschung (Commission for Water Research)
Member 1968 – 1977
 - Senatskommission für Ozeanographie (Commission for Oceanography)
Member 1974 – 1995, Chair 1986 - 1995
 - German SCOR Committee
Member 1975 – 1995, Chair 1980 - 1995
 - Committee for the German meteorological research aircraft
Member from 1978
 - Physics Committee, Oceanography and Physics of the Atmosphere
Elected referee 1980 - 1988
- *Bundesministerium für Forschung und Technologie (Federal Ministry Science and Technology)*
 - Committee for Research Vessels and Underwater Systems
Member 1969 - 1971
 - Committee for Measurement Technology
Member 1970 – 1973
 - Committee for Permanent Buoy Stations in the North and Baltic Seas
Member 1974 – 1975
 - Commission for Marine Research and Ocean Technology

Member 1975 – 1978

German-Brazilian bilateral research programs in ocean science and technology

Coordinator 1983 - 1989

German WOCE Committee

Chair 1986 - 1989

■ GKSS Research Center

Technical and Scientific Advisory Board

Member 1976 – 1981

Scientific experience

- Research on ocean circulation and climate, boundary currents, oceanic fronts, flow through straits, mixing processes and internal waves
- Instrument development
- Thesis advisor to about 80 diploma and doctoral students

Awards

- Dedicated special volume: New Views of the Atlantic: A Tribute to Gerold Siedler, Topical Studies in Oceanography, Deep Sea Research II, 1999.
- Alexander von Humboldt - Research Award 2004/2005, National Research Foundation, South Africa

Member of steering committees or convener of 14 international assemblies, among them:

- "Joint Oceanographic Assembly", Tokyo, Japan, Convener for the "Symposium on engineering problems in monitoring the ocean", 1970.
- "Joint Oceanographic Assembly", Acapulco, Mexico, President of lead sponsoring organisation SCOR, 1988.
- "International WOCE Scientific Conference", Unesco, Paris, France, Chairman, 1988.
- "European Geophysical Society, XV General Assembly", Copenhagen, Denmark, Convener of the symposium "Ocean Circulation and the Heat Budget", 1990.
- "The South Atlantic: Present and Past Circulation", SCOR/TOS/WOCE, Bremen, Germany, Member of Scientific Committee, 1994.
- "Konstantin Fedorov Memorial Symposium: Oceanic Fronts and Related Phenomena", St. Petersburg, Russia, Member of the International Scientific Committee, 1998.
- "The Conference of the World Ocean Circulation Experiment: Ocean Circulation and Climate", Halifax, Canada, Chairman of the Science Organizing Committee, 1998.

Lectures

About 200, among them:

- 23.04.1990 XV General Assembly, European Geophysical Society, Kopenhagen, Denmark, "Seasonal changes of flow fields and heat storage in the eastern tropical Atlantic."
- 15.05.1990 Institut für Meereskunde, Warnemünde, "Eigenschaften langer Strömungszeitreihen."
- 06.08.1990 Oceanographic Institute of the University of Sao Paulo, Brasilien, "Gyre dynamics and heat transport."
- 04.12.1990 University of Las Palmas, Gran Canaria, Spain, "Physics of the ocean: new developments and international programmes." (invited)
- 14.08.1991 XX.General Assembly, Vienna, Austria. International Union for Geodesy and Geophysics, "Circulation and atmospheric forcing in the eastern tropical Atlantic Ocean."

- 28.03.1994 International Association for the Physical Sciences of the Ocean. Symposium: "Interbasin Exchanges in the Southern Hemisphere." Cape Town, South Africa, "Exchanges across the WOCE South Atlantic heat flux line A10." (invited)
- 17.06.1994 IFREMER, Centre de Brest, Laboratoire de Physique des Océans, Brest, France, "Long-term changes in the upper North Atlantic heat content."
- 21.06.1994 Laboratoire des Ecoulements Geophysiques et Industriels, Institut de Mécanique de Grenoble, Grenoble, France, "On the South Atlantic circulation."
- 01.09.1994 University of Honolulu, Honolulu, Hawaii, USA, "Near-decadal changes of North Atlantic heat content."
- 08.08.1995 International Association for the Physical Sciences of the Ocean, XXI General Assembly, Honolulu, Hawaii, USA, "Circulation and Meridional Heat Fluxes in the South Atlantic." (invited)
- 01.10.1996 Centre ORSTOM Nouméa, New Caledonia, "Circulation in the South Atlantic – results from WOCE."
- 31.03.1998 Ciclo de Conferencias, University of Concepción, Chile, "The Global Ocean Circulation and the role of the South Atlantic."
- 18.05.1998 Konstantin Fedorov Memorial Symposium "Oceanic Fronts and Related Phenomena", St. Petersburg/Pushkin, Russia, "Subtropical fronts: structure and processes".
- 27.04.2000 Instituto de Ciencias Marinas, Telde, Spain, "The path of the Antarctic Intermediate Water from the Southern Ocean to the Canary region".
- 14.09.2000 University of Hawaii, USA, "The South Atlantic: Passage for the Global Thermohaline Circulation"
- 02.11.2000 University of Hawaii, International Pacific Research Center, USA, "Pathways of intermediate and deep waters in the equatorial West Pacific"
- 26.09.2005 SANCOR Seminar, University of Cape Town, South Africa, „Is there something like a mean current in the open ocean?“
- 24.10.2005 SANCOR Seminar, University of Cape Town, South Africa, „Connecting observations and model results: a case study from the West Pacific“
- 15.05.2006 Herder-Gymnasium, Rendsburg, "Der Ozean und unser Klima"
- 09.10.2006 SANCOR Seminar, University of Cape Town, South Africa, "Subtropical countercurrents in the global ocean"
- 28.05.2007 SANCOR Seminar, University of Cape Town, South Africa, "The East Madagascar Current revisited"
- 10.03.2008 Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Frontier Research Center for Global Change (FRCGC), Yokohama, Japan, "Upper-ocean countercurrents in the subtropical oceans"
- 11.03.2008 University of Tokyo, Department of Earth and Planetary Science, Tokyo, Japan "Circulation in the source region of the Agulhas Current"
- 18.03.2008 University of Hawaii, International Pacific Research Center and International Center for Climate and Society, Honolulu, USA, "Western boundary currents and the subtropical countercurrent in the southern Indian Ocean"
- 28.03.2008 Columbia University, Lamont-Doherty Earth Observatory, New York, USA, "Circulation in the source region of the Agulhas Current"
- 23.10.2008 Woods Hole Oceanographic Institution, Woods Hole, USA, "Properties of western boundary flow in the South Indian Ocean"

Membership in professional societies:

- German Physical Union
- German Meteorological Union
- German Geophysical Union
- American Geophysical Union, U.S.A.
- Oceanography Society, U.S.A.

Participation in research cruises (only long cruises)

<u>Year</u>	<u>Vessel</u>	<u>Region</u>
1959	Hermann Wattenberg	Baltic Sea
1960	Hermann Wattenberg	Baltic Sea
1961	Anton Dohrn	Eastern North Atlantic
1961	Chain (U.S.A.)	Mediterranean Sea
1962	Hermann Wattenberg	Kattegat (Chief scientist)
1964	Meteor	Biskaya
1964	Meteor	Red Sea, Indian Ocean
1966	Alkor	Skagerrak (Chief scientist)
1967	Meteor	Eastern North Atlantic
1967	Gosnold (U.S.A.)	Western North Atlantic (Chief scientist)
1967	Chain (U.S.A.)	Western North Atlantic
1969	Jean Charcot (France)	Mediterranean Sea
1969	Planet	Norwegian Sea
1971	Meteor	Eastern North Atlantic (Chief scientist)
1971	Atlantis II (U.S.A.)	Western North Atlantic
1973	Meteor	Eastern North Atlantic (Chief scientist)
1974	Planet	Tropical Atlantic
1978	Planet	Eastern North Atlantic (Chief scientist)
1980	Poseidon	Skagerrak (Chief scientist)
1982	Meteor	Eastern North Atlantic (Chief scientist)
1983	Meteor	Eastern North Atlantic (Chief scientist)
1985	Polarstern	Eastern North Atlantic (Chief scientist)
1986	Meteor	Eastern North Atlantic (Chief scientist)
1987	Meteor	Eastern North Atlantic (Chief scientist)
1991	Meteor	South Atlantic (Chief scientist)
1995	Poseidon	Eastern North Atlantic (Chief scientist)
1996	Sonne	West Pacific (Chief scientist)

Publications

24 books or contribution to books and 80 papers in reviewed journals, among them:

SIEDLER, G., M. ROUAULT, A. BIASTOCH, B. BACKEBERG, C. J. C. REASON, and J. R. E. LUTJEHARMS (2009), Modes of the southern extension of the East Madagascar Current, *J. Geophys. Res.*, 114, C01005, doi:10.1029/2008JC004921

SIEDLER, G., M. ROUAULT, and J. R. E. LUTJEHARMS (2006): Structure and origin of the subtropical South Indian Ocean Countercurrent. *Geophys. Res. Lett.*, 33, L24609, doi:10.1029/2006GL027399.

ZENK, W., G. SIEDLER, A. ISHIDA, J. HOLFORT, Y. KASHINO, Y. KURODA, T. MIYAMA, T. J. MÜLLER (2005): Pathways and variability of the Antarctic Intermediate Water in the western equatorial Pacific. *Progress in Oceanography*, 67, 245-281.

SIEDLER, G., L. ARMI, T. J. MÜLLER (2005): Meddies and decadal changes at the Azores Front from 1980 to 2000. *Deep-Sea Research II*, 52 (3-4), 583-604.

- SIEDLER, G., HOLFORT, J., ZENK, W., MÜLLER, T.J. and CSERNOK, T. (2004): Deep water flow in the Mariana and Caroline Basins. *J. Phys. Oceanogr.*, 34(3), 566-581. 5
- VANICEK, M. and G. SIEDLER (2002): Zonal fluxes in the deep layers of the western South Atlantic Ocean. *J. Phys. Oceanogr.*, 32 (8), 2205-2235. HOLFORT, J., and G. SIEDLER (2001): The meridional oceanic transport of heat and nutrients in the South Atlantic. *J. Phys. Oceanogr.*, 31, 5-29.
- SCHMID, C., G. SIEDLER and W. ZENK (2000): Dynamics of Intermediate Water Circulation in the Subtropical South Atlantic. *J. Phys. Oceanogr.*, 30, 3191-3211.
- ZENK, W., G. SIEDLER, B. LENZ and N. HOGG (1999): Antarctic Bottom Water flow through the Hunter Channel. *J. Phys. Oceanogr.*, 29(11), 2785 - 2801.
- HOGG, N., G. SIEDLER and W. ZENK (1999): Circulation and Variability at the Southern Boundary of the Brazil Basin. *J. Phys. Oceanogr.*, 29, 145 -157.
- KLEIN, B., R.L. MOLINARI, T.J. MÜLLER und G. SIEDLER (1995): A transatlantic section at 14.5N: Meridional volume and heat fluxes. *J. Mar. Res.*, 53 (6), 929-957.
- KLEIN, B. und G. SIEDLER (1995): Isopycnal and diapycnal mixing at the Cape Verde Frontal Zone. *J. Phys. Oceanogr.*, 25 (8), 1771-1787.
- ROSSBY, T., G. SIEDLER and W. ZENK (1995): The Volunteer Observing Ship and Future Ocean Monitoring. *Bull. Am. Meteorol. Soc.*, 76 (1), 5-11.
- SPEER, K.G., G. SIEDLER und L. TALLEY (1995): The Namib Col Current. *Deep-Sea Res. I*, 42 (11/12), 1933-1950.
- ZLOTNICKI, V., G. SIEDLER und B. KLEIN (1993): Can the weak surface currents of the Cape Verde Frontal Zone be measured with Altimetry? *J. Geophys. Res.*, 98(C2), 2485-2493.
- SPRINTALL, J., SIEDLER, G., and MERCIER, H. (2013): Interocean and Interbasin Exchanges. In: Siedler, G., Griffies, S. M., Gould, J., and J. A. Church (eds), 2013: *Ocean Circulation and Climate – A 21st Century Perspective*. Elsevier - Academic Press, Amsterdam, 493 – 518.
- SIEDLER, G., S.M. GRIFFIES, J. GOULD, and J.A. CHURCH (Eds.) (2013): *Ocean Circulation and Climate – A 21st Century Perspective*. Elsevier - Academic Press, Amsterdam, 868 pp.
- SIEDLER, G. (2007): Defant, Albert Josef Maria. In: Koertge, N. (Ed.), *New Dictionary of Scientific Biography*, Charles Scribner's Sons, New York, vol.2, 263-267.
- BOEBEL, O., G. SIEDLER and J.R.E. LUTJEHARMS (Guest editors) (2005): Direct observations of oceanic flow, a tribute to Walter Zenk. *Deep-Sea Research II*, 52 (3-4), 375-664.
- SIEDLER, G., J. CHURCH and J. GOULD (Eds.), 2001: *Ocean Circulation and Climate: Observing and Modelling the Global Ocean*. Academic Press, San Diego, London, 715 pp.
- SIEDLER, G. und W. ZENK (1997): *Physikalische Ozeanographie*. In W. Raith (Ed.): Bergmann-Schaefer, Lehrbuch der Experimentalphysik, Band 7, Erde und Planeten, de Gruyter, Berlin, Kapitel 2, 53-130 (2.überarb. Auflage: 2001)
- WEFER, G., W.H. BERGER, G. SIEDLER and D.J. WEBB (Eds.) (1996): *The South Atlantic: Present and Past Circulation*. Springer Verlag, Berlin, Heidelberg, 644 p.
- SIEDLER, G. und R. ONKEN (1996): Eastern Recirculation. In: W. Krauss (Ed.), *The Warmwatersphere of the North Atlantic Ocean*, Gebrüder Borntraeger, Berlin, Stuttgart, Ch. 1, 339-364.
- SIEDLER, G. und H. PETERS (1986): Properties of sea water, Physical properties (general). In: LANDOLT-BÖRNSTEIN, *Numerical Data and Functional Relationships in Science and Technology*, New Series, Oceanography, (Ed. J. SÜNDERMANN), V/3a, 233-264.

DIETRICH, G., K. KALLE, W. KRAUSS und G. SIEDLER (1980): General Oceanography.
2nd revised edition, J. Wiley, New York, 626 pp