

## Friedrich A. Schott (1939–2008)

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The physical oceanography community recently lost one of its most influential and productive scientists. Friedrich A. (“Fritz”) Schott, who had been fighting leukemia for about a year, died on 30 April 2008 at the age of 69.

Fritz was awarded a Ph.D. in oceanography in 1964 from the then Institut für Meereskunde (now Leibniz Institute of Marine Sciences, or IFM-GEOMAR) at the University of Kiel, in Germany, under the guidance of Günter Dietrich. After several years of working for a private company, he returned to academia in 1968 to pursue a successful career in IFM’s Department of Regional Oceanography (later Physical Oceanography).

In 1978, Fritz accepted an offer to become a professor at the Rosenstiel School of Marine and Atmospheric Science at the University of Miami, in Florida, where he served as chair of the Division of Meteorology and Physical Oceanography from 1979 to 1984. In 1987, Fritz returned to IFM as a professor of physical oceanography and head of the Department of Regional Oceanography, until becoming professor emeritus in October 2004. Despite his move back to Kiel, Miami remained his second home. He frequently returned to visit, and he established a close relation between the Kiel and Miami institutes.

Understanding the ocean circulation and its central significance for global climate lay at the heart of Fritz’s research. Fritz participated in more than 30 research cruises to key regions of the Atlantic and Indian oceans, and with the help of his hard-won data he made fundamental contributions to our understanding of the wind-driven and thermohaline ocean circulation. The breadth of his work is remarkable, covering topics as diverse as surface and deep circulations, deep convection, marginal sea and continental shelf circulation, ocean dynamics, internal waves, tides, technical development of current measurements, and most recently, applications of ocean reanalysis for research.

Together with Henry Stommel of the Woods Hole Oceanographic Institution, in Massachusetts, Fritz developed the “beta spiral” method for unambiguously determining the ocean circulation from hydrographic data alone, thereby solving a long-standing problem in physical oceanography. His insights and explorations of circulation and dynamics of the tropical Indian and Atlantic oceans were at the forefront of the field and provided a major contribution to the planning of large interna-



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tional experiments. Fritz’s work is also distinguished by his ability to make exceptional use of modeling results, exploiting their ever improving capabilities. His research explored the correspondence between the observed and modeled ocean circulations, documenting theoretical successes as well as deficiencies.

Much of Fritz’s research was devoted to studying the dynamics of tropical oceans with their intense and highly variable current systems. Throughout his career, the Indian Ocean remained particularly close to Fritz’s heart. In the late 1970s and early 1980s, he investigated the response of the Indian Ocean’s Somali Current system to the variable monsoon winds, which resulted in high-quality, hydrographic surveys and the first long-term direct measurement of ocean currents from moored arrays. His analyses and interpretations provided a synthesis of the complex circulations of the region. Overall, his numerous fundamental contributions resulted in a complete picture of Indian Ocean circulation, including surface flows and undercurrents; upwelling, subduction, and spreading of shallow-water masses; and the modulation of climatological flows by both interannual and intraseasonal variability. In the tropical Atlantic Ocean, Fritz’s research focused on the western boundary circulation with groundbreaking, long-term measurements contributing to the understanding of the Florida Current, the Deep Western Boundary Current, the complex western boundary circulation including the North Brazil Current retroflexion, and the transport of North Atlantic Deep Water into the Southern Hemisphere.

In the late 1980s, Fritz became interested in open-ocean convection. This process,

which occurs mainly in high latitudes, is characterized by an intense heat loss to the atmosphere. Measurements of vertical velocity and hydrography—carried out with moored instruments during active convection in the Gulf of Lions, the Greenland Sea, and the Labrador Sea—represent the observational basis of his fundamental work regarding open-ocean convection, and those measurements resulted in a landmark paper presenting observational and theoretical perspectives. Fritz was the initiator and driving force behind the Dynamics of the Thermohaline Circulation collaborative research project, funded by the German Research Foundation from 1996 to 2006. Within that project, he and his colleagues made major contributions to our understanding of the sinking of cold, dense waters in the northern North Atlantic, a process critical for deep-ocean circulation as well as for the role played by the Gulf Stream and Deep Western Boundary Current system for climate.

Fritz’s scientific portfolio comprises more than 100 major publications in international, peer-reviewed journals. His exceptional research and service were also recognized by leading national and international scientific organizations. This recognition included his appointment as senator of the German Research Foundation and as a member of the scientific steering committees of the World Ocean Circulation Experiment (WOCE) and the Climate Variability and Predictability (CLIVAR) project. In addition, he received the Fridtjof-Nansen Medal of the European Geophysical Union, the Prince Albert I Medal of the International Association for the Physical Sciences of the Oceans, and the Henry Stommel Medal of the American Meteorological Society (AMS). He was a fellow of both the AMS and AGU.

Fritz was an extraordinarily talented physical oceanographer with the ability to synthesize field data and model results into a compelling vision of how the oceans behave and interact in the climate system. He focused on the big problems, and he derived significant results and insight on ocean dynamics and properties. Even after his retirement, Fritz remained active in marine science, authoring numerous scientific papers. With his passing, the oceanography community has lost a colleague of relentless energy and drive. Fritz’s friends, fellow scientists, and former students will sorely miss his advice, intellect, optimism, and humor. Our sympathy and condolences are extended to his wife and their three sons and four grandchildren.

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