

Obituary for Günter Fischer

MARTIN DUNST and KLAUS FRAEDRICH*

Meteorologisches Institut der Universität Hamburg, Hamburg, Germany

Günter Fischer's life (1924–2011) and his great merits are connected to Hamburg, to the weather, and to theoretical meteorology. In his early youth Günter Fischer had already been introduced to his later area of expertise: His father kept diaries about the weather and discussed weather maps and weather events with his son. When Günter Fischer was drafted by the navy as an officer cadet in 1942, at the age of 18 and just before passing the German secondary-school diploma Abitur, he applied for an education as a nautical meteorologist, unfortunately without being accepted.

It was not before the summer of 1948 that he could start to pursue his interest in meteorology by academic studies at the University of Hamburg. He completed his studies with the Diploma in the summer of 1953. Two years later he earned a PhD under Prof. Paul Rathjen for a thesis on synoptic waves using observations by the English radio sound network; at this time he was employed by the maritime weather office focusing on wind observations and the swell of the North Sea.

In 1956, the then-director, Hans Ulrich Roll, recommended him to the renowned International Institute for Meteorology in Stockholm, which was headed by Carl Gustav Rossby at that time. During his two-year assignment, within Per Welander's team he set out on a research endeavor initiated by Walter Hansen aiming at the numeric simulation of wind surge and tidal forces of the North Sea. Stockholm was an ideal site for this research since the supercomputer BESK which allowed for this kind of investigation was located there. Using a special numerically stable method, he was successful, for the first time ever, to reproduce the M2-Tide realistically based on the input of water levels at the open boundaries. The same applied to the simulation of the development of storm tides. Here, his future scientific guiding theme, the numeric simulation of dynamic processes in the atmosphere, started to take shape. And it was here that the first strong and lasting ties to oceanology were established.

After his return from Sweden, Günter Fischer became assistant of Paul Rathjen at the Meteorological Institute. He chose "Large-scale atmospheric dynamic" and "Numeric simulation and analysis of general circulation" as his new fields of activity. These days, the targeted promotion of global atmospheric dynamics began. Especially successful was Günter Fischer's cooperation with the research department of the German Weather Service (DWD): supported by the then-head of department and later president, Heinz Reiser, Günter Fischer qualified as a professor in 1962 with a thesis on the adaption of circulation and mass fields. One year later, Günter Fischer followed an invitation for a research stay at the National Center for Atmospheric Research in Boulder. In the company of Aksel Wiin-Nielsen, Akira Kasahara and Warren Washington he focused on the establishment and evaluation of numerical methods in view of wind-driven barotropic Gulf Stream circulation.

In 1965, having returned to Hamburg, he continued his investigations within a project founded by the German Research Foundation (DFG). Here, he developed a barotropic channel model featuring modern numerical methods in order to study the problems of barotropic instability, excitation mechanisms induced by mountains as well as wind approximation. Together with a student of the Hamburg mathematician Lothar Collatz, from an early stage on he established the connection between theoretical meteorology and mathematics.

The installation of the DFG priority program "Energy balance and circulation in the atmosphere", which was oriented towards the Global Atmospheric Research Program (GARP) at the end of the sixties, opened up new horizons for Günter Fischer's research. His contributions to the project SPAAZ were dedicated to the development of a model for atmospheric circulation. With these research funds, a working group "Theoretical Meteorology" was set up at the University of Hamburg. During the almost ten-year funding period of SPAAZ, this group firstly designed and developed a hemispheric barocline circulation model under the auspices of Erich Roeckner. Accordingly, at the end of the seventies the first global circulation model was made available in Germany, substantially contributing to the following evolution of global climate modeling in Hamburg which was advanced by Klaus Hasselmann.

At the end of the eighties, due to the support of the DFG within the scope of Collaborative Research Centre (SFB) 94 and its speaker Hans Hinzpeter, two permanent posts for scientists focusing on theory could be established at the Meteorological Institute; an assistant position had already been created several years earlier. Thus, the working group had evolved into an established Department for Theoretical Meteorology at the Meteorological

*Corresponding author: Klaus Fraedrich, Meteorologisches Institut der Universität Hamburg, Bundesstraße 53, 20146 Hamburg, Germany, e-mail: klaus.fraedrich@zmaw.de

Institute. In 1979, Günter Fischer was appointed to the Chair for Theoretical Meteorology. Within the scope of the first national climate program, the Department for Theoretical Meteorology took charge of the “maintenance” of a global spectral atmospheric model originating from ECMWF. The model development was documented in a specific publication series “Large Scale Atmospheric Modeling”. Günter Fischer contributed to a study on the development of circulation on an aqua planet which was published together with Edilbert Kirk and Rolf Podzun.

Several generations of students have been enriched by Günter Fischer’s dedicated lectures ever since 1960: as an assistant lecturer for meteorology at the Mountain Academy Clausthal, from 1966 on as a research associate and senior lecturer, then as an associate professor and finally as Full Professor and Chair. He held the lecture series Theoretical Meteorology I and II for many years with his invariably strong commitment and his dedication to excellent didactic concepts; his lecture notes were continuously being updated.

With great educational skills he motivated young associates and introduced them to challenging scientific issues. His chapter on numerical weather forecast can still be read in the paperback “Meteorologisches Taschenbuch” by Bauer and Linke (1970) As the editor of volume V74 (1987) of Landolt-Börnstein, he managed to compile comprehensive scientific depictions. “The Dynamics of the Atmosphere” was written by himself. His competence and his cooperative working-style bestowed a multitude of academic responsibilities upon him: reviewer of the DFG, member of the scientific advisory board of the DWD, speaker of the Faculty of Geosciences and head of the Hamburg branch of the German Meteorological Society (DMG).

After his retirement (1989) he was still at the institute’s disposal for research and teaching, thus being closely connected to the scientific life of the University of Hamburg for more than 40 years. Günter Fischer’s students, colleagues, and the University of Hamburg grieve for an eminent and highly esteemed scientist.