

Mitteilungen / Notes

In memoriam Dr. Dietmar Wagenbach

(* 15 March 1948 – † 04 December 2014)

“If you have knowledge, let others light their candles in it” (M. Fuller 1810-50)

With the sudden and unexpected passing of Dietmar Wagenbach at the end of last year, we lost another pioneer of polar and high alpine research; one who made outstanding contributions to our understanding of the chemistry and physics of atmosphere and snow in these remote regions.

Born on the 15th of March 1948, he spent his youth in Ulm, Germany, where he passed his high school exams before moving first to Stuttgart and later on to Heidelberg to study physics. The development of the new research field of “Environmental and Climate Physics” and the founding of the Institute for Environmental Physics (IUP) at the University of Heidelberg in 1975, was a stroke of luck for an ingenious mind like Dietmar’s, bringing together his passion for physics and alpine glaciers. Accordingly – apart from a short excursion into teaching high school students – he spent his entire research career at the University of Heidelberg, where he found the inspiring environment to carry out his ideas. In 1981 he finished his PhD at the IUP under the supervision of its first director Karl Otto Münnich. One goal of the new Institute under Münnich’s visionary leadership was a comprehensive physical understanding of all compartments of the Earth System and accordingly Dietmar became the head of the Institute’s research group on “Glaciers and Climate”, known to his students as “Dietmar’s Eisgruppe”. In this function Dietmar (Fig. 1) continued to shape the institute in the spirit of K.O. Münnich.

Early on, Dietmar recognized the great potential of ice cores as a unique climate and environmental archive, not only for polar regions but also for high alpine regions in Europe and elsewhere. Uniquely offering long-term ice core records from the Alps, the firn saddle Colle Gnifetti (Fig. 2), located at 4500 m a.s.l. in the Monte Rosa massif on the border between Switzerland and Italy, became Dietmar’s favourite study site. Being especially affected by wind redistribution and complex glacier flow, this site never fell short of providing many intricate challenges. From early reconnaissance to several down-to-bedrock ice core drillings, Colle Gnifetti became a unique playground for Dietmar in which to study the exchange of aerosol between the atmosphere and snow, and to reconstruct the glaciological, atmospheric and climatic history of this central European site over the last millennia. Dietmar dedicated a large part of his career to this, leading several European collaborative projects with French, Swiss and Austrian partners working on the Colle Gnifetti but also contributing his unique expertise to numerous other endeavors throughout the Alps, from Col du Dome, France to Hoher Sonnblick, Austria.

Although his heart was always closest to the “Colle” and other alpine sites, he expanded his research to glaciological, isotopic and chemical studies on snow samples and ice cores in both polar regions. There he was the mastermind behind several traverse studies on the Filchner Ronne Shelf Ice, Antarctica, and in Northern Greenland. Dietmar’s polar activities were carried out in a long-term partnership between his group in Heidelberg and the Alfred Wegener Institute for Polar and Marine Research (AWI) in Bremerhaven, and provided unique spatio-temporal information on the mass balance, climate conditions and aerosol chemistry over many centuries in these areas. Before these expeditions, there was essentially a blank spot on the glaciological map of these remote regions in Greenland and Antarctica.

While ice cores represent one side of the coin in the reconstruction of aerosol changes in the past, direct atmospheric observations on aerosol filters represent the other. Dietmar recognized from the very beginning that without a firm understanding of the air-snow transfer, no quantitative conclusions could be drawn from ice core records. Accordingly, in a time when “atmospheric monitoring” was still largely regarded not of interest by many funding agencies, he pioneered the



Fig. 1: Dietmar Wagenbach, pioneer of aerosol and ice core research in polar and high alpine regions (Photo: Barbara May).



Fig. 2: The Colle Gnifetti in the Monte Rosa massif on the border between Switzerland and Italy, the perfect playground for Dietmar Wagenbach's research. The small red tent is located close to the latest drilling location, where a down-to-bedrock core was recovered in summer 2013 (Photo: Pascal Bohleber).

establishment of continuous aerosol sampling at the German wintering-over station Neumayer, in collaboration with the AWI. This unique atmospheric observatory at Neumayer is meanwhile in its third hardware generation and provides the only continuous aerosol record from Antarctica over the last 30 (!) years in weekly to bi-weekly resolution.

Dietmar's most creative thinking is reflected in the 100 odd publications he was involved in, which always pushed our knowledge of snow, ice and the atmosphere forward, and of which many laid out the scientific field for years to come. With all these achievements, Dietmar could have easily played leading roles on the most famous scientific stages, but this was not in his humble nature. Although he is recognized as one of the outstanding experts in his field and was a long-term member of the scientific advisory board of the German Society for Polar Research (DGP), awards, decorations and highest ranks on science indices – which are becoming increasingly popular – were not the things he was after. Instead, all he ever wanted to achieve was to create new knowledge using a unique combination of physics skills and scientific intuition, and to pass this knowledge on to his students. By measuring high quality data sets of novel, ingenious (isotopic and chemical) aerosol tracers and by identifying the physical laws that explained the observations, he always aimed at obtaining a deeper quantitative understanding. When he made the note "Too descriptive!!!" on a paragraph in a paper draft of one student, supplemented by pictograms of flashes of lightning, that meant going back to the drawing board for all of us.

His stringent scientific thinking and ethical views on the role of a scientist in the process of knowledge generation was also conveyed to the large number of students he supervised during

his career, all of which admired him as a role model. Despite his sometimes gruff exterior, Dietmar was a social animal of great authority, able to inspire his students and collaborators. He felt most at home in the snow with his students, either drilling an ice core, pulling through a snow storm at 4500 m altitude or enjoying the sunshine on skis.

In 2013, "Dietmar's Eisgruppe" celebrated its 30th anniversary at the Institute in Heidelberg. In the same year, Dietmar officially retired but did not reduce his scientific activity one iota, visiting friends and long-term collaborators in Europe while continuing to supervise the group in Heidelberg. Dietmar initiated another new drilling at Colle Gnifetti and was actively involved in the ongoing work as well as in various projects at other alpine sites. His passion for his work remained as burning as ever and left no doubt that there were still many innovative ideas he planned to pursue in the future, combined with the wish to spend more time in his much-loved Alps. Knowing him as active as ever, the shock to so unexpectedly lose him and his creative mind was even larger. It is a terrible thought to imagine that our science journey will have to continue without him, but we will always keep him in our memory as an inspiring scientist, a passionate glaciologist, superb skier and fatherly friend. Our thoughts are foremost with his family at this time of great personal loss.

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and
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