

later come into contact with anoxic pore waters rich in hydrogen sulphide, as is the case for normal steady-state conditions. The result was an expanded suboxic zone in which magnetite was not dissolved. Lower levels of dissolved oxygen in the water column because of warming or freshening of surface waters, or both¹³, might have further enhanced the formation of this suboxic zone^{3,4}.

As both papers mention, a third study of the magnetic properties of sediment spanning the PETM from three sections deposited on the shelf and upper slope of New Zealand is in the pipeline¹⁴. This work lacks detailed transmission electron microscopy and ferromagnetic resonance

analyses, but shows, on the basis of magnetic-hysteresis measurements, an anomalous abundance of magnetite precisely across the PETM. In light of other recent literature^{13,15}, the explanation might be that the massive carbon input and extreme global warming of the PETM induced fundamental changes in the precipitation and the delivery of river-borne sediment to continental margins¹. Meanwhile, the search for a fully satisfactory origin of that great carbon input goes on.

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BERT BOLIN

A natural leader



It took almost two decades after Bert Bolin became the first chairman of the Intergovernmental Panel for Climate Change (IPCC) in 1988 for the panel to be recognized with a Nobel Peace Prize. But at least Bolin, who died on 30 December 2007 aged 82, lived to see the process that he had started with his pioneering work be honoured earlier this year.

Bert Bolin was born on 15 May 1925 in Nyköping, Sweden, and arrived at his later interest in global biogeochemical cycles, and the carbon cycle in particular, via an early career in atmospheric dynamics and numerical weather prediction — one of the most quickly expanding fields during the 1950s.

Having studied physics and mathematics at the University of Uppsala, Bolin benefited from Carl-Gustaf Rossby's decision to reverse the brain drain and build up the International Meteorological Institute in Stockholm after 22 years in the US: Bolin obtained his MSc in the lively atmosphere of the newly founded institute. After spending a year in the US, he worked on his PhD in Stockholm, which he obtained in 1956. The photo shows him at his PhD defense.

By the year that he completed his PhD, Bert Bolin had already been given temporary charge of the International Meteorological Institute while its director Carl-Gustaf Rossby was on a sabbatical, and when Rossby died in 1957, Bolin succeeded him as the leader of the institute. It was Rossby, whose own interest had shifted towards the investigation of atmospheric chemistry, who advised Bolin to move into this field¹.

Henning Rodhe, Bolin's successor in the leadership of the International Meteorological Institute and close collaborator since the 1970s, characterizes him as friendly, humble, clever, focused, diplomatic and efficient, and attests an unusual ability to see the larger picture as well as a very good memory.

It must have been these qualities that made Bert Bolin so successful when, in the mid-1960s, he turned his hand to the coordination of international science, including a two-year directorship of the European Space Research Organization in Paris and the creation

of the Global Atmospheric Research Programme — the forerunner of the World Climate Programme. The thread of international science organization continues throughout his career and includes a leading involvement in setting up the International Geosphere Biosphere Programme in the mid-1980s.

Bert Bolin served as the chairman of the IPCC from 1988 to 1997, and the first two assessment reports were assembled under his leadership. His interest in the process never ceased: he was the chairman of the nominating committee for both his successors, Robert Watson and Rajendra Pachauri, and he devoted his last book *A History of the Science and Politics of Climate Change: The Role of the Intergovernmental Panel on Climate Change*, published in November 2007, to the subject.

In 1991, Henning Rodhe wrote, somewhat sceptically “The latest, but probably not the last, major contribution of Bert Bolin on the international scene has been as chairman of the Intergovernmental Panel on Climate Change [...]. It is still too early to judge the success of this panel”¹. With the benefit of hindsight, steering the nascent IPCC towards its more recent prominence was probably Bert Bolin's greatest achievement.

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