J Seismol (2017) 21:1–2
DOI 10.1007/s10950-016-9620-6

OBITUARY

Cinna Lomnitz (4 May 1925–7 July 2016): the pioneering seismologist

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Received: 12 September 2016 / Accepted: 12 September 2016 / Published online: 12 November 2016

Cinna was born in the city of Cologne, Germany. His father, an eminent lawyer, foresaw the years of terror that were dawning on the Jewish ethnic German minorities and moved his family out of the country. Cinna spent the last years of his childhood and his early youth in Belgium before the family immigrated to Chile. He graduated as a civil engineer from the University of Chile in Santiago before going to Harvard to earn a master degree under the guidance of Karl von Terzaghi. From Harvard, Cinna travelled west to California to pursue a doctorate at Caltech. As Cinna often mentioned, at Caltech, he was fortunate to work side by side with the more eminent seismologists of the time: Hugo Benioff, Beno Gutenberg and Charles Richter. Lomnitz graduated from Caltech in 1955 with a thesis entitled "Creep measurements in igneous rocks with some applications to aftershock theory". His doctoral research led to understand that the deformation of rocks under sustained geological processes behaves logarithmically as a function of time. Today, this basic principle is known as *Lomnitz Law*.

After Caltech, Cinna returned to Chile in 1957 as the head of the Department of Geophysics at his alma mater, the University of Chile. At that time, as a young seismologist, Cinna lived the unique, but difficult and compromising situation of witnessing the 22 May 1960 earthquake and its long sequence of aftershocks. In 1964, Lomnitz returned to the USA as head of the Berkeley seismological network, pursuing a life-long passion for seismic instrumentation. Invited by the distinguished engineers, Roger Díaz de Cossío and Emilio Rosenblueth, Cinna joined to the National University of Mexico (UNAM). At the time of his death, Cinna was an emeritus professor at the Institute of Geophysics, UNAM.

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Cinna Lomnitz was active in a broad spectrum of scientific topics. Early in his career, he developed an interest in explaining the seismic cycle using Poissonian statistics, a passion and commitment that he maintained throughout his scientific life. He fervently questioned the "blind" (sic) trust in seismic gaps in explaining earthquake return periods, advocating a more quantitative statistical analysis. His interest in instrumentation led him to develop, in collaboration with a group of systems engineers and computer scientists from the Institute of Applied Mathematics (IIMASS) at UNAM, what was probably the first digital and telemetered seismic network in the world, using a central processing facility to automatically discriminate and pick the phases of incoming seismic events. The lack of adequate communications in the country at that time impeded the development of this innovative project.

As many seismologists, Cinna was shocked by the unexpected damage suffered by Mexico City during the M_w8.1 earthquake of 19 September 1985. This experience led him to research the then unexplained causes of the high deformation rates and long duration of the unique Mexico City soils; this task occupied most of his late scientific life. Cinna Lomnitz's research earned him numerous distinctions: in 1995, the National Arts and Science Award; in 1997, the Universidad Nacional Autónoma de México Award and in 2002, he was honoured as an emeritus professor. He was the editor of the *Geofísica Internacional* for over two decades and a member of several editorial boards.

Beyond his scientific contributions and accomplishments, Cinna Lomnitz was at heart an original thinker. As a rule, he eschewed conventional wisdom and searched for alternative and innovative answers to the many scientific problems that interested him. Cinna never feared the risk of being proven wrong; for him, it was more important to open new avenues than to follow the treaded path. An affable and amiable man, Cinna loved to engage conversations on topics that could range from Mexican pre-Hispanic history to the character and taste of mescal made from different agave varieties. Always, with a smile on his face, he continued to attend the Institute of Geophysics until his death, engaging colleagues in scientific discussions and writing tirelessly. His scientific and engineering community will remember fondly the legacy of Cinna Lomnitz.