

Prof. Dr. Dr. rer. nat. h.c. Claude Boutron Honorary Doctor 2010



Claude Boutron was born on June 26, 1947 in the French City of Gap. He is one of the most highly regarded researchers worldwide in glaciology and atmospheric chemistry. He studied physics and geophysics at the Joseph Fourier University of Grenoble in France, where he graduated with a PhD degree and was awarded a professorship.

Claude Boutron embarked on his academic career in 1969 as a research associate at the Atomic Energy Commission in Fontenay aux Roses in France. During the period from 1970 to 1988 he committed himself, in addition to his research work, to his lecturing activities at the Joseph Fourier University in Grenoble. In 1981 and 1984/85 he also worked several times as a research associate with the California Institute of Technology in the USA. In the 1990s he was Visiting Professor at the Ca'Foscari University of Venice in Italy and at the Curtin University of Technology of Perth in Australia. For the past ten years he has been Visiting Professor at the University of Ancona in Italy.

Claude Boutron's research activity is focused in particular on the development of the concentration of heavy metals (lead, mercury, zinc, copper, etc.) and other trace elements in the atmosphere of the present day and that of the past millennia. His research emphasizes the analysis of atmospheric composition with focus on human-caused changes. Tests are conducted by drilling snow and ice cores in Antarctica, Greenland, or in the Alps and are carried out within the framework of international research programs like the European Greenland Ice Sheet Program (GRIP). Research here concentrates on the Roman period, the Middle Ages, and the post industrial revolution period, since it was particularly during these times that human beings were responsible for changes in the atmospheric composition in terms of heavy metals and other trace elements.

In addition, the atmosphere during the last 800,000 years is investigated with a focus on atmospheric changes due to the swings between ice ages and warm periods.

Claude Boutron has contributed considerably to the development of technologies that allow for the reliable detection of heavy metals, often present in only minute concentrations at levels below 0.1 picogram per gram. This applies particularly to air samples taken from the snow and ice cores in Antarctica.

One of the most spectacular results of research conducted by Prof. Boutron is scientific proof that the air in the northern hemisphere was already contaminated with lead and copper in the Roman period, i.e. long before the industrial revolution. Furthermore, Mr. Boutron has furnished detailed proof of the rise and fall of atmospheric lead concentrations between the 1930s and the 1960s. During this period, lead concentrations in both the northern and southern hemisphere rose considerably due to the fact that lead was increasingly added to gasoline used for modern transportation. This can be clearly observed even today in the Greenland ice sheet. Current research work of Claude Boutron shows signs of a contamination of the hemisphere with platinum, palladium, and rhodium from automobile exhaust catalyts.