

English translation of our article in the «Bündner Woche», August 28, 2019, p. 21

## Research in Graubünden

### Research for the “Kurverein”

The history of ozone measurement in Arosa

The History of science is an exciting subject: why, it asks, are discoveries made in certain time periods? Why did researchers take an interest in a topic and explore it in a particular way? These are also the initial questions of “Light, Air, Ozone” (Licht, Luft, Ozon), the new book by science journalist Martin Läubli. It examines the question of how the Light-climate observatory (Lichtklimatisches Observatorium / LKO) was founded in Arosa in 1921 and how it developed until it merged with the Physical Meteorological Observatory (Physikalisch-Meteorologisches Observatorium / PMOD) in Davos in 2019.



First measuring park at the Hotel Innerarosa. Photo credit: LKO archive

Interestingly enough, it was the spa and tourism association (Kur- und Verkehrsverein Arosa) that initiated this scientific development out of an economic crisis in 1921. The income from visitor's tax had plummeted with the First World War, only a few could still afford the expensive health treatments in Switzerland. Thorough research into the health benefits of solar radiation was to help the

health resort of Arosa back into prosperity. They looked to Davos, where the German physicist Paul Götz was already researching at the PMOD. The spa and tourism association Arosa hired Götz. He lived inexpensively at the Kurhaus Arosa and built his instruments on the roof of the Arosa Sanatorium. His annual salary was 4'000 Swiss francs.

In addition to the usual meteorological data such as temperature and humidity, the solar radiation was measured in order to “determine the heat intensity of the sun and its ultraviolet component”. Götz also began to relate his data to the ozone concentration in the atmosphere as a result of his international contacts: Ozone absorbs the sun's ultraviolet radiation and converts it into heat, therefore less radiation reaches the earth, while its outer shell, the stratosphere, heats up.

In 1926, Götz began recording the “Total ozone” between the earth and the stratosphere. It was to be the longest ozone measurement series in the world, which is still an important instrument in ozone research

today. In the 1970s, it demonstrated how the ozone layer was destroyed by chlorofluorocarbons. Therapy for tuberculosis, on the other hand, which had been the main driver of interest for research in solar radiation, was replaced by the use of antibiotics from 1943 onwards. Nevertheless, Arosa (together with Davos) was now firmly placed on the scientific map.

The author, Martin Läubli, tells this story and its many side strands in “Licht, Luft, Ozon” in a lively and comprehensible manner. There is a clear structure and the appealing graphics by Rachel von Dach underpin the narrative. This is an exciting piece of the History of science that recounts Graubünden’s intensive relations with the international world of research.

*Martin Läubli, Licht, Luft, Ozon. Bern: Haupt Verlag, 2019 CHF 39.00*

### **About the author of “Licht, Luft, Ozon”**



*Martin Läubli*

Martin Läubli studied geography, environmental studies and journalism at the University of Zurich. For the past 19 years he has been working as science editor for the “Tagesanzeiger”, specializing in environment and energy. In 2013, he was awarded the Prix Média of the Swiss Academies. In addition to journalism, he is also involved in teaching science to children. Please direct your questions on the subject to [info@graduateschool.ch](mailto:info@graduateschool.ch) by September 4.

Find out more about research in Graubünden: [www.academiaaetica.ch](http://www.academiaaetica.ch), [www.graduateschool.ch](http://www.graduateschool.ch).

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