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Editorial

Research at Jungfrauoch

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ABSTRACT

The High Altitude Research Station at Jungfrauoch is widely recognised as an important research site. This is documented by the fact that Jungfrauoch was recently selected as one of the 24 Global Atmosphere Watch stations (GAW) within the framework of WMO activities. The GAW activities are in line with the International Global Observing Strategy (IGOS) on Integrated Global Atmospheric Chemistry Observation (IGACO). In addition, Jungfrauoch is an alpine site within the Network for the Detection of Atmospheric Composition Change (NDACC). Jungfrauoch is also a station within national networks such as the Swiss national network of air pollution observation (NABEL), which is part of the European Monitoring and Evaluation Program (EMEP), investigating particularly the large-scale dissemination of air pollutants within Europe. The station was opened in 1931. Therefore, an international conference to celebrate the 75th anniversary of the High Altitude Research Station Jungfrauoch was held at Interlaken, Switzerland (11–13 September, 2006). Studies across different research fields were presented, stimulating discussions among representatives of many disciplines from chemists, physicists, astronomers, and biologists to physicians.

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1. Introduction

The international foundation known today as “High Altitude Research Stations Jungfrauoch and Gornergrat, HFSJG” was founded in 1930. Present member countries include Austria, Belgium, Germany, Great Britain, Italy, and Switzerland. This foundation was established to support research that requires high altitude and/or high alpine environment. Funding is mainly based on support by the Swiss National Science Foundation, as well as annual contributions from member countries and redemptions. Further details can be found on <http://www.hfsjg.ch>.

A relief of the research station as it was planned is pictured in Fig. 1. In 1931, the research station was opened after a rather short construction phase (Fig. 2). Jungfrauoch is situated in

the Swiss Alps in between the three well-known mountains, Eiger, Mönch, and Jungfrau. The research station is at an altitude of 3450 m above sea level. The Sphinx laboratory is 130 m higher (3580 masl, 7° 59' 2" E, 46° 32' 53" N) and was established in 1937 (Fig. 3). The Sphinx observatory (Fig. 4) is accessible not only for researchers but also for tourists by rapid elevators. The air pressure at the Sphinx ranges from 619 to 675 mbar with an average of 653 mbar. The mean annual temperature is -8.2 °C, with temperatures ranging from -37 °C to +10 °C. Jungfrauoch is a unique research site because of its excellent location in the centre of Europe at high altitude, making it ideal for different kinds of research. A significant advantage over most other high mountain research stations is the easy access by regular train connections. In addition, Jungfrauoch offers an excellent infrastructure (Fig. 2) due to

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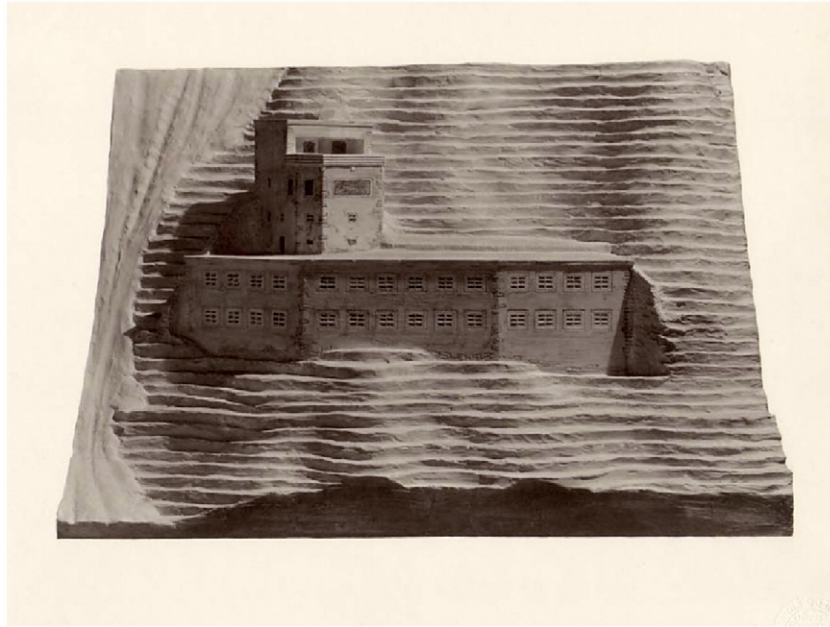


Fig. 1 – Relief of the planned research station at Jungfrauoch (1930).

its attraction as a splendid view point over the Swiss Alps and the magnificent Aletsch glacier (Fig. 4): Top of Europe is visited by roughly half a million tourists every year.

During the last 75 years many research highlights were celebrated at Jungfrauoch. This will be briefly summarized in a non-exhaustive manner. The focus of this volume is on the current research done at Jungfrauoch presented at the international conference held at Interlaken in September 2006 in celebration of the 75th anniversary of its existence. There were many oral and poster contributions at the

conference; a selection of 14 contributions could be included in this volume.

2. Research at Jungfrauoch

2.1. Research highlights in the first 50 years

In the early years the Sphinx was one of the highest observatories in the world, and therefore during the first



Fig. 2 – View of the buildings at Jungfrauoch. In front is the complex of the Jungfrau Railways including several restaurants and tourism facilities. To the right, the research station, which was built in close agreement to the original planning. On top the Sphinx, which is accessible by fast elevators. (Source: Jungfraubahnen).

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