

ON "GROSSVERSUCH III," A RANDOMIZED HAIL SUPPRESSION EXPERIMENT IN SWITZERLAND

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1. Introduction

A randomized weather modification experiment, "Grossversuch III," was conducted in Switzerland for seven years, 1957–63, to study whether it is possible to prevent hail by releasing large amounts of silver iodide smoke from ground based generators. The test area was the Canton Ticino and the adjoining Mesolcina Valley. This region covers about 3500 square km on the southern slopes of the Alps, ranging in altitude from 200 m to 3400 m above sea level.

This is a final report. The first three sections give a brief account of the design, execution, and hail results of the experiment. Since natural precipitation in this region is high (1400–2400 mm per year), the possibility of rain stimulation was not the subject of the experiment. Nevertheless, rainfall was recorded, the records were evaluated, and sections 4 and 5 explain the methodology and summarize the results.

The agency responsible for Grossversuch III was the *Eidgenössische Kommission zum Studium der Hagelbildung und der Hagelabwehr*, a federal Commission originally presided over by the late Professor R. Sängler and subsequently by Mr. P. Hohl. The actual execution of the experiment was the responsibility of the Osservatorio Ticinese at Locarno-Monti, with Mr. J. C. Thams as its Scientific Director.

2. The design of the experiment

Previous to Grossversuch III, from 1953 to 1956, the Eidgenössische Kommission performed another cloud seeding experiment with hail prevention, "Grossversuch II," which was not randomized. The test area was a valley in the Canton Ticino. On days when hail was expected, silver iodide smoke was released from ground based generators and it was hoped that the effectiveness of the method could be established by comparing the incidence of hail on seeded days either with the incidence in the earlier years or with that in some control areas, not influenced by seeding. In 1956 it became clear that, because of the lack of randomization, whatever differences in hail incidence could have been