

A Basic Study on Technology of Inducing Artificial Avalanche by Explosive Detonation Inside the Snowpack

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Avalanche inducing technology to ensure the safety of the potentially dangerous area practiced in Japan relies on blasting off the snow layer with the explosive loads imbedded within the snowpack. The exact mechanism of inducement of an artificial avalanche with this method, however, is difficult to elucidate and calls for a basic study of the detail of what is happening.

The present study describes the measurement of the pressure spreading in a snowpack, a snow pit study around the blast point and experiments of artificial avalanche under a variety of combinations of the loading dispositions.

As a result, it is found from the experiments that the formation of a smooth sliding surface was the most important in successfully inducing an artificial avalanche.

Therefore, the loading method to form a smooth sliding plane was studied. The experiments showed that a new loading method successfully induced an artificial avalanche.