The formative condition of the "Gohei" type is becoming clear by the observations and experiments. (1) There was a rule in the tip angle of the "Gohei" type, (2) the "Gohei" type grew as a part of combination of bullets, and (3) the condition of saturation at the nucleation was at or near the water saturation. Therefore, it was concluded that the "Gohei" type crystals grew from frozen cloud droplets. From these results, it is considered that a polycrystalline snow crystal was defined by their *c*-axes when a cloud droplet was frozen, and if at that time, two prism planes grew and crossed each other at a small angle, their crossing planes grew as "Gohei" type crystals.

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## A NUMERICAL EXPERIMENT ON KATABATIC WIND WITH A TWO-DIMENSIONAL AXIAL SYMMETRIC MODEL (Abstract)

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The vertical structure of the katabatic wind and the surface temperature inversion on a clear day in winter are well represented by a two-dimensional numerical model.

An axially symmetric circular continent, which has an elliptic cross-section of 2000 km in radius and 4000 m in height, is supposed, assuming that all variables are uniform along the direction perpendicular to the fall line. Radiative cooling, turbulent transfer and transport of heat and momentum by stationary and transient eddies are included in the model. The time marching method is adopted. The model is integrated for 5 days. Some features of the katabatic wind are well represented. An inversion layer of 24°C in strength and 450 m in height is formed on the slope (inclination is $2.9\times10^{-3}$); the wind speed is 20 m/s at the height of 70 m, and decreases to 6 m/s at the height of 200 m. Strong wind blows in the layer above which the temperature gradient is very large. An inversion layer of 30°C in strength and 650 m in height is formed on the plateau (inclination is $0.5\times10^{-3}$); the wind speed is 10 m/s at the height of 30 m.

The surface temperature and the wind profile get almost steady state. However, the atmosphere is still cooling at the rate of 0.4–2°C/day due to radiative cooling; this must be compensated with adiabatic heating by subsidence about 3 mm/s, though it is only 1–2 mm/s in this model. This is a matter of meridional circulation.

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## HEAT FLUX IN SURFACE SNOW AT MIZUHO STATION, ANTARCTICA: HOURLY VALUES (Abstract)

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The errors in short term snow heat flux calculation (T. KIKUCHI: Mem. Natl Inst. Polar Res., Spec. Issue, **29**, 61, 1983) are corrected (1) by using the