

Murakami, M., 2019: Inner structures of snow clouds over the Sea of Japan observed by instrumented aircraft: A review. *J. Meteor. Soc. Japan*, **97**, 5-38.  
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**Plain Language Summary:** Snow clouds, which bring heavy snowfall to populated coastal plains, have been extensively studied by analyzing data acquired by aerological, meteorological satellite, and radar observations, or conducting numerical simulations. Because of the difficulties with accessing cloud systems over the ocean, however, few in situ observation data have been available, and up until the middle 1990s, many problems remained unsolved or their analysis and simulation results had not been validated. Here we review knowledge gained from instrumented aircraft observations, made from the middle 1990s through the early 2000s.

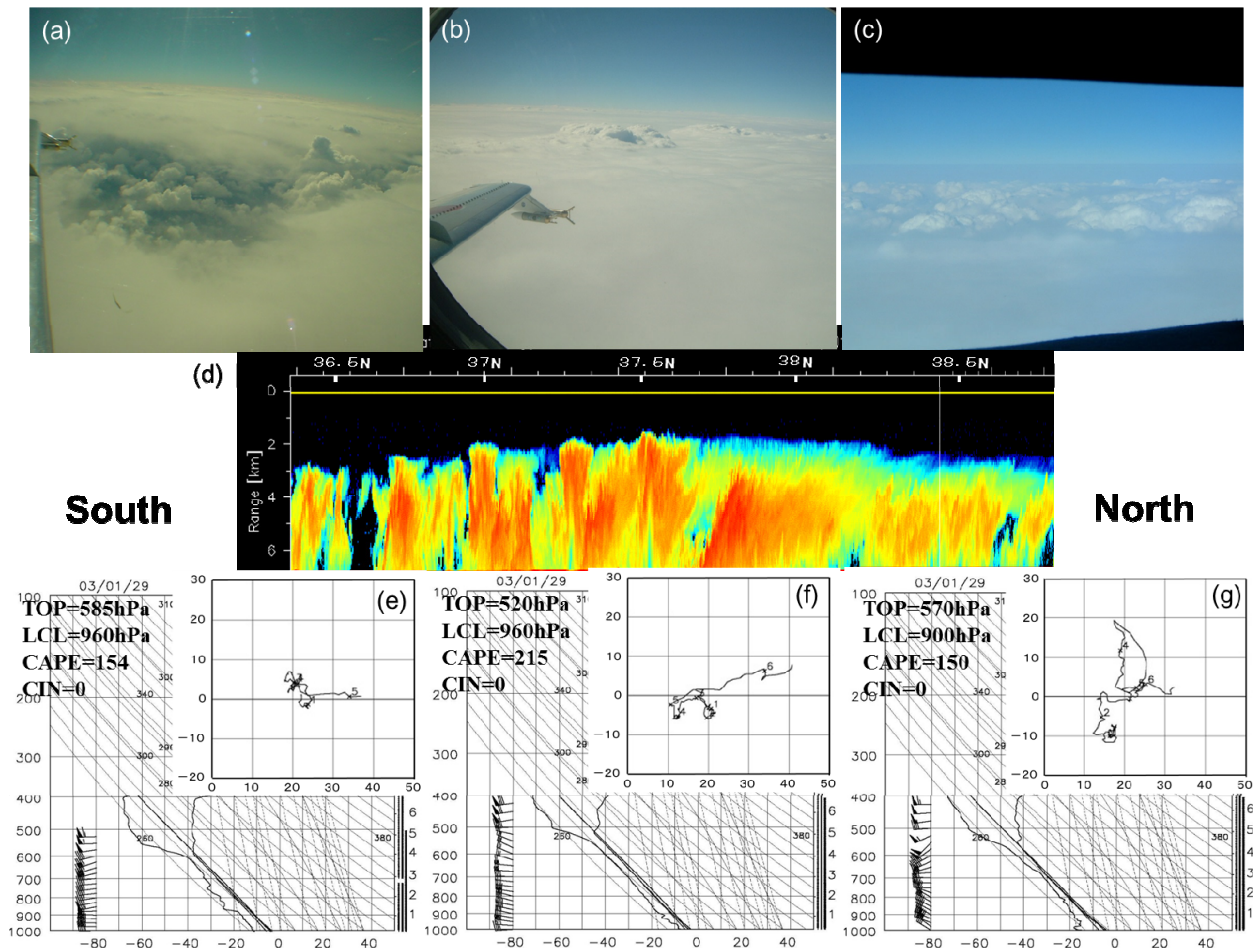


Figure S6. Photos of well-developed JPCZ cloud bands taken from the G-II (a) south of 36.5°N, (b) in the vicinity of 37.5°N, and (c) north of 38.5°N. (d) Vertical cross section of radar reflectivity measured by W-band cloud radar, and results of dropsonde soundings obtained at around (e) 36.4°N, (f) 37.5°N, and (g) 38.5°N. Photos in (a) and (b) are facing west and that in (c) is facing north.

- The development of a convectively mixed boundary layer and cloud formation over the Sea of Japan are documented, mostly based on data collected by an extensive suite of instrumentation (in situ measurement probes, cloud radar, nadir-looking microwave radiometer, and GPS dropsonde) on G-II aircraft.
- Microphysical, thermodynamic, and kinematic structures of shallow convective snow bands are described on the basis of B200T instrumented aircraft and dual Doppler radar observations.
- Inner structures of well-developed JPCZ cloud bands with a W–E orientation are documented mainly on the basis of data collected by the extensive suite of instrumentation on G-II aircraft.
- Inner structures of polar low, which formed as a result of interaction between the flow field of a synoptic low and the topography of Japanese islands, are documented, mainly on the basis of data collected by the extensive suite of instrumentation on G-II aircraft, along with additional dropsonde soundings from the Citation V aircraft and radiosonde soundings from JMA observation vessels, along with special observation sites in coastal areas.