

Sato K., T. Kameda, T. Shirakawa, 2022: Heavy snowfall at Iwamizawa influenced by the Tsushima Warm Current. *J. Meteor. Soc. Japan*, **100**, 873-891.

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**Plain Language Summary:** This study used reanalysis data to investigate atmospheric and oceanic circulation anomalies associated with each anomalous heavy snowfall winter month at Iwamizawa on the Sea of Japan side of Hokkaido is one of the cities in Japan. During anomalous snowfall January, warm surface-layer ocean anomaly over the northern Sea of Japan, which preceded the heavy snowfall events at Iwamizawa by two months, has an important role in upward turbulent heat flux anomaly. This preceding warm ocean temperature anomaly was associated with a strong Tsushima Warm Current anomaly.

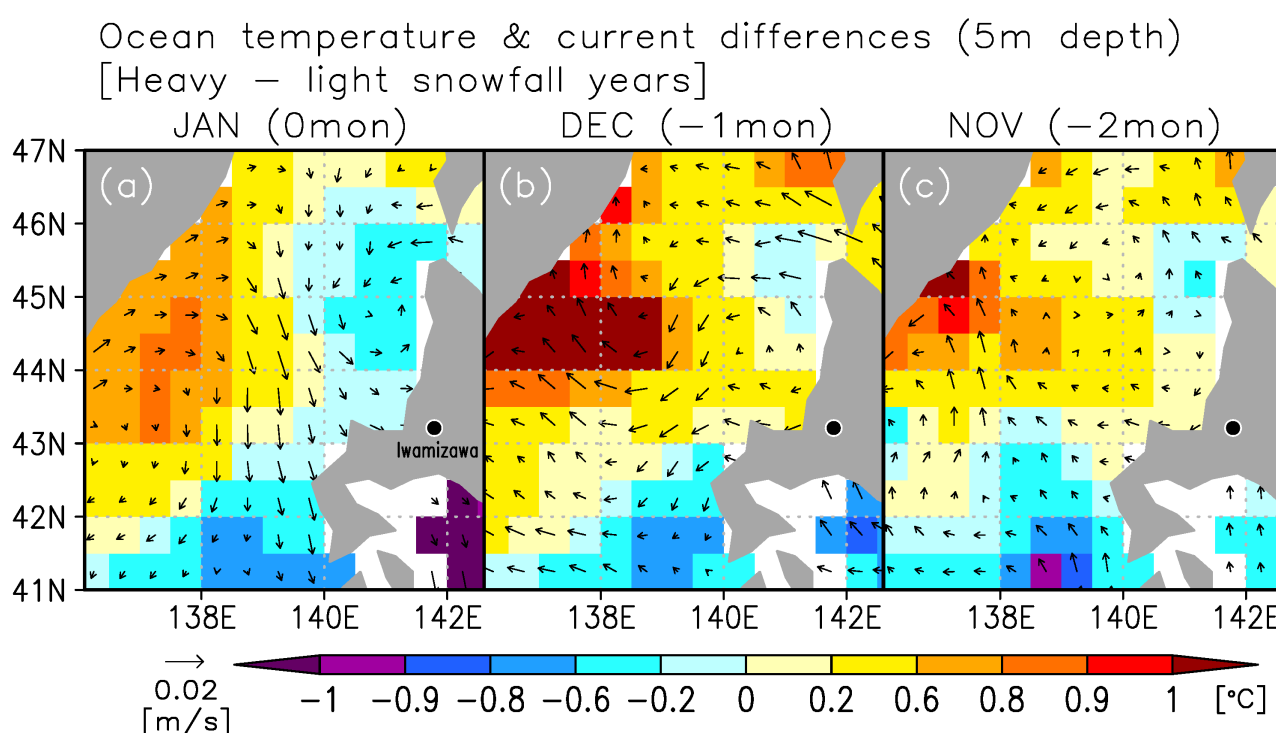


Figure 1. Difference maps of ocean temperature (°C: shading) with ocean currents (m/s: vectors) at 5-m depth between heavy and light snowfall January at Iwamizawa for (a) 0 month (January), (b) -1 month (December), and (c) -2 month (November) lag times. Black dot shows location of Iwamizawa station.

- Warm surface-layer ocean anomaly, which was seen over the northern Sea of Japan during anomalous snowfall January at Iwamizawa, causes increase in snowfall amounts in coastal regions of western Hokkaido.
- This warm surface-layer ocean anomaly preceded the heavy snowfall events at Iwamizawa by two months (i.e. December and November).
- This preceding warm ocean temperature anomaly was associated with a strong Tsushima Warm Current anomaly.