**INTRODUCTION**

- During the winter cold air from the Asian continent moves across the Sea of Japan (~400 km across), producing seemingly omnipresent snowbands that impact the west coast of Japan.

**OBJECTIVES**

- To describe the structure of transverse-mode snowbands impacting the Ishikari Plain and surrounding mountains on Hokkaido Island, Japan.
- To explore the changes in structure and precipitation mechanism that orography induces in transverse-mode snowbands.
- To determine the controls of precipitation distribution over the lowlands vs. the mountains.

**RESULTS**

- Transverse bands formed upstream of Hokkaido Island following the passage of a shortwave trough around 0000 UTC January 12 (right).

- Transverse bands with X-band radar during the passage of a shortwave trough around 0000 UTC January 12 (right). Note transverse bands and cloud band associated with trough passage.

- X-band radar imagery shows the band’s structure (right). Black arrow denotes motion of the overall band, red arrow indicates direction of movement of cells within each transverse sub-band.

- A trace of precipitation rate (right) taken at Hokkaido University (above right, black dot), demonstrates the sporadic nature of precipitation as transverse bands impacted the Ishikari Plain.

**CONCLUSIONS**

- Transverse-mode bands produce sporadic bursts of precipitation and focused precipitation maxima over and around affected terrain.
- Transverse bands intensify as they cross high terrain, suggesting an invigoration of convection.
- Flow diverted around coastal terrain creates acceleration and convergence just upstream of the precipitation maximum.
- High coastal terrain creates precipitation maxima that disappear when model simulations are run with no terrain.