

Nishii, A., T. Shinoda, and K. Sassa, 2025: Maintenance mechanisms of orographic quasi-stationary convective band formed over the eastern part of Shikoku, Japan. *J. Meteor. Soc. Japan*, **103**, <https://doi.org/10.2151/jmsj.2025-014>.

Plain Language Summary: This study examines the maintenance mechanisms of the Muroto Line, a south-north oriented quasi-stationary convective band that appeared from the Muroto Peninsula in the eastern part of Shikoku, Japan. This study analyzed two Muroto Line cases using mainly observational data. Although the mountains in Shikoku are very complex, this study highlights the importance of a small-scale ridge at the southernmost tip of the Muroto Lines in maintaining them. The Muroto Lines were maintained by the repeated formation of convective clouds by warm-moist flow modified by the small-scale ridge and their northward advection by southerly winds 2-4 km in height. The warm-moist inflow along the eastern side of the Muroto Lines also contributed to their maintenance.

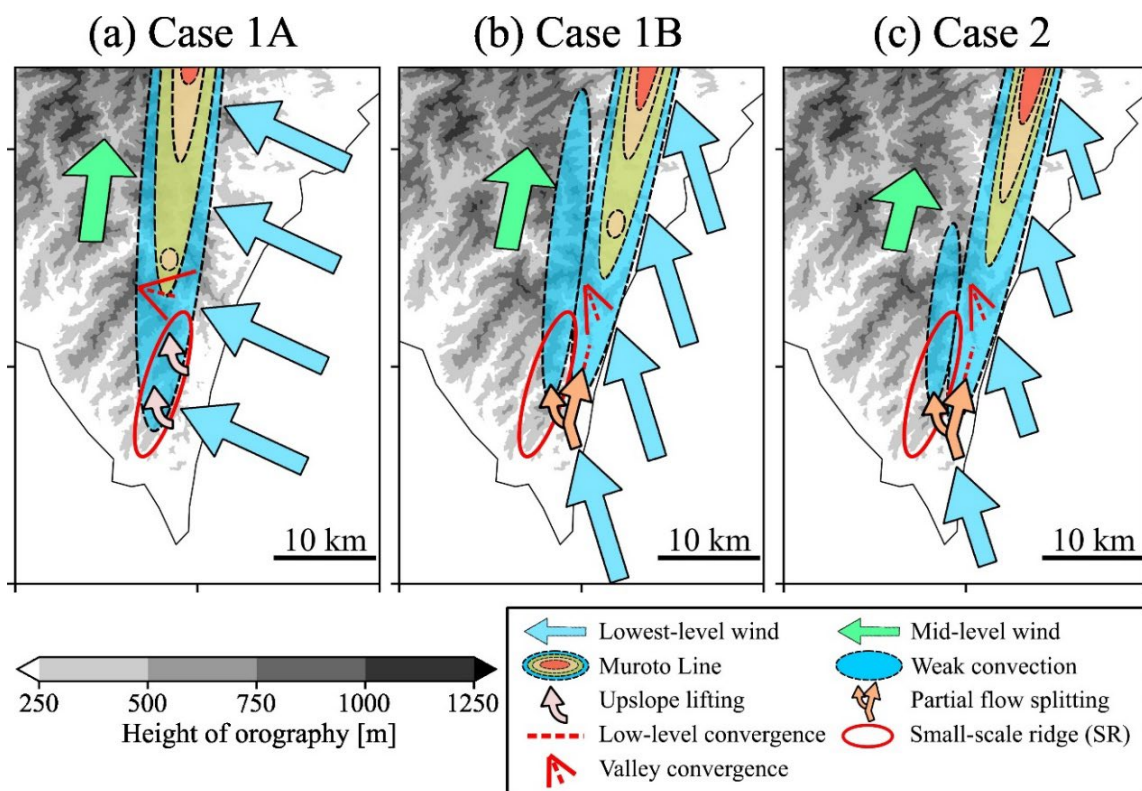


Fig. 1 Schematic diagrams of the airflow structures and orography that contributed to the maintenance and development of the Muroto Lines analyzed in this study. (a) Case 1A (12–15 Japan Standard Time (JST; UTC+9h) on July 3, 2018). Orography is shown by gray-scale shading. (b) Same as (a), but for Case 1B (17–20 JST on July 3, 2018). (c) same as (b), but for Case 2 (16–21 JST on August 15, 2018).

- The Muroto Line were maintained their line-shaped structure by the continuous generation of convective clouds at their southernmost tip and their northward advection.
- Maintenance locations of the Muroto Lines shifted slightly according to the wind direction near the surface, which could be attributed to a change in the effect of the small-scale ridge on wind.