

Kato, T., 2020: Quasi-stationary band-shaped precipitation systems, named “senjo-kousuitai”, causing localized heavy rainfall in Japan. *J. Meteor. Soc. Japan*, **98**, 485-509.

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**Plain Language Summary:** Localized heavy rainfall events with 3-hourly accumulated precipitation amounts larger than 200 mm are often observed in Japan. Such events are majorly brought from quasi-stationary band-shaped precipitation systems, named as “senjo-kousuitai” in Japanese. Senjo-kousuitai is defined as a band-shaped heavy rainfall area with the length of 50-300 km and the width of 20-50 km, produced by successively formed and developed convective cells, lining up to organize multi-cell clusters, and passing or stagnating at almost the same place for a few hours.

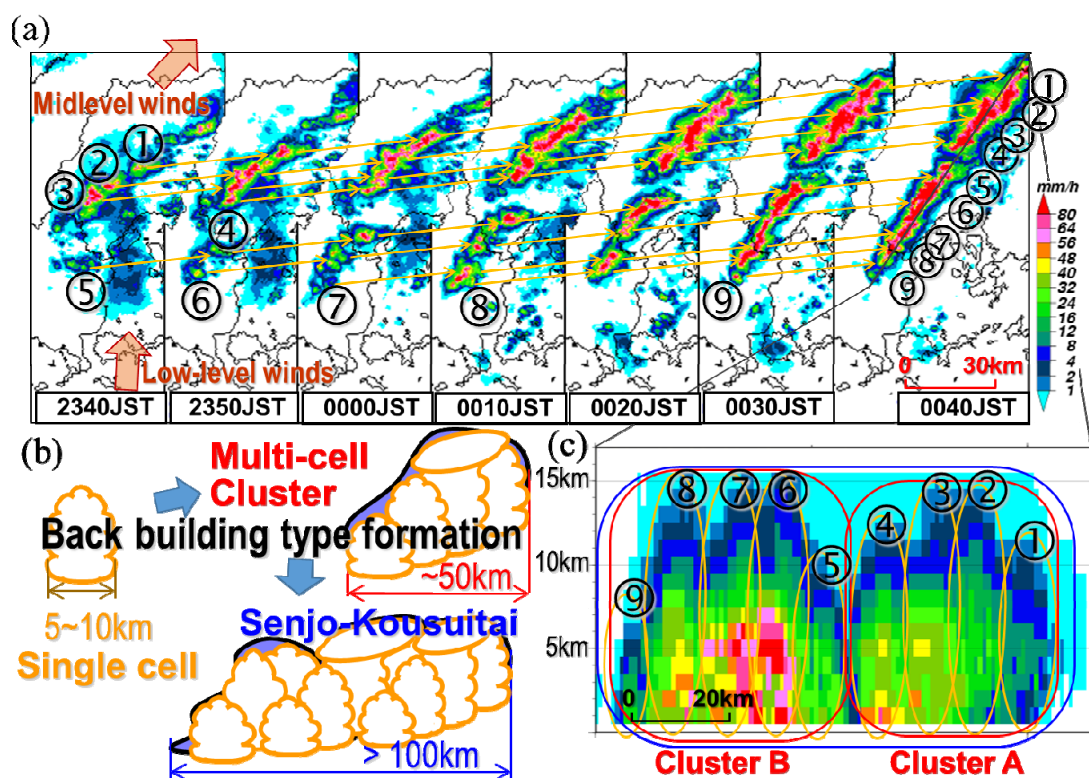


Figure 1. (a) Ten-minute time series of radar-estimated precipitation intensity ( $\text{mm h}^{-1}$ ) in Hiroshima heavy rainfall on 20 August 2014. (b) Schematic diagram of formation mechanisms and structure of the multi-cell cluster and senjo-kousuitai. (c) Vertical cross section on the black line in (a). Multi-cell clusters A and B consist of convective cells ①-④ and ⑤-⑨, respectively.

- This study reviewed previous studies of band-shaped precipitation systems, and also examined the numerical reproducibility of senjo-kousuitai events.
- Characteristics of senjo-kousuitai events are statistically studied based on distributions of 3-hourly accumulated precipitation amounts.
- Six favorable occurrence conditions of senjo-kousuitai events for their diagnostic forecasts were statistically constructed from environmental atmospheric fields in previous events.