

Kudo, A., 2025: DeepMedcast: A Deep Learning Method for Generating Intermediate Weather Forecasts among Multiple NWP Models. *J. Meteor. Soc. Japan*, **103**, <http://doi.org/10.2151/jmsj.2025-031>.

Plain Language Summary: Numerical weather prediction (NWP) centers operate various NWP models that produce different predictions. When these models have comparable accuracy, it is difficult to know which one to trust. Traditional approaches like ensemble averaging often produce unrealistic predictions, especially around cyclones and fronts. DeepMedcast is a deep learning method that generates intermediate forecasts between multiple NWP models. Unlike averaging, it preserves realistic and interpretable atmospheric features without distorting their structure.

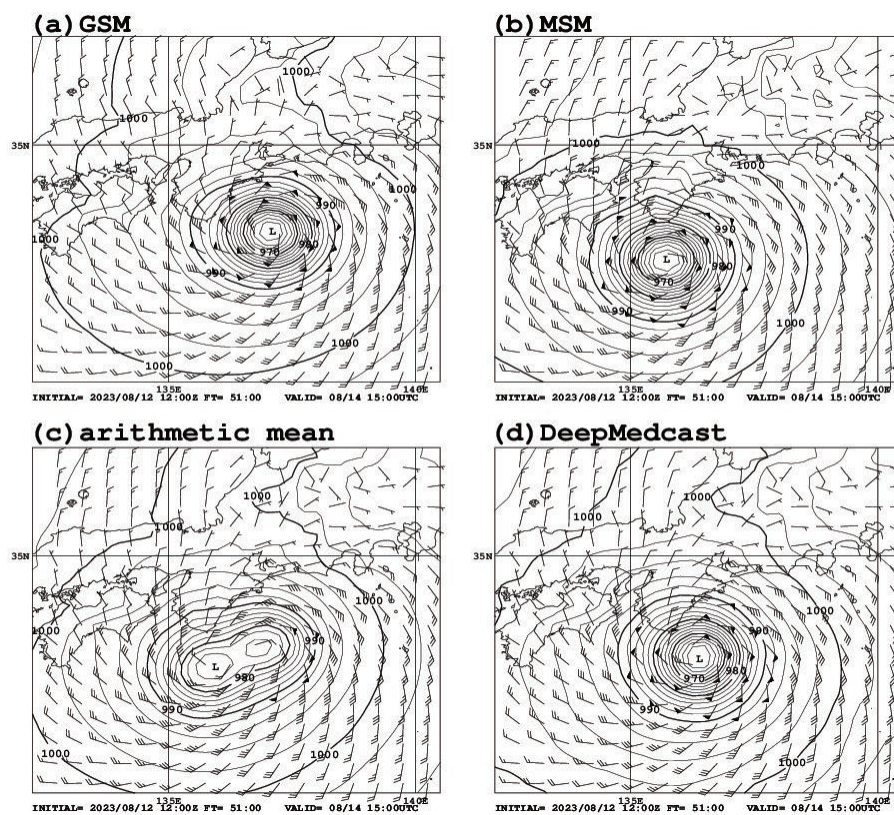


Figure 1. Comparison of Typhoon LAN forecasts in 2023 from (a) JMA's Global Spectral Model (GSM), (b) Meso-Scale Model (MSM), (c) their arithmetic mean, and (d) DeepMedcast. While the arithmetic mean causes the typhoon center to split into two, DeepMedcast produces a single, well-defined center located between the GSM and MSM predictions.

- A novel deep learning-based method, DeepMedcast, is proposed to generate intermediate forecasts between multiple NWP models.
- Case studies and verification results demonstrate that DeepMedcast produces realistic and accurate predictions.
- DeepMedcast works with various NWP model outputs without requiring retraining or fine-tuning.