



## Abstract Details

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**Title:** (OA 12) Sea-Breeze Simulation Over the Malayan Peninsula

**Abstract:**

The diurnal evolution of sea breezes over the Malayan peninsula is simulated (in forecast mode), for a date typical of the intermonsoon period, using the COAMPS mesoscale atmospheric model of the US Naval Research Laboratory (Hodur 1997). The model when run with three nested domains (54, 18, 6 km horizontal grid sizes) and 60 vertical levels (half of which below 3 km) begins to capture the basic features of sea-breezes over the Malayan peninsula. For instance, the time-height section of zonal velocity at a west coast station, Penang, and a horizontal cross-section of vertical velocity on 600 m level at 20 hr local time (LT) are shown in Fig. 1. The reversal of zonal winds occurs slightly after 13 hr LT, and the maximum vertical extent of the sea-breeze inflow, about 1300 m, is realized at 19 hr LT (cf. Fig. 1, left panel). A sea-breeze front running north-south along the west coast of Malaysia can be clearly identified from the (right) panel showing the vertical velocity. Certain characteristic features of double sea-breeze interactions in the inland peninsula will be described through animations of the diurnal evolution. Model forecasts are evaluated against GMS satellite imagery for the simulated date, as well as with observed upper-air wind and temperature profiles at three stations along the southwest coast of the Malayan peninsula. In general, although the mean fields are reasonably well-simulated, the moisture/cloud related variables are poorly predicted by the current model configuration. Plausible reasons for the mismatch between model forecasts and observations are discussed, and some remedial measures are investigated. \\ R. M. Hodur, Mon. Wea. Rev. 125, 1414 (1997).

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