

9.4 Evaluation of a gray-zone PBL scheme at sub-kilometer resolutions.

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A gray-zone PBL scheme, which was developed by Shin and Hong, was evaluated at sub-kilometer resolutions, along with the comparison to the results from the YSU PBL scheme, that is, the corresponding column physics module. For snow fall events that was developed over the Yellow Sea, the intensity of precipitation become stronger at higher resolutions from 9 km to 0.333 km when the YSU PBL is configured. This intensification is alleviated in the presence of the Shin-Hong PBL scheme. The reason is due to dryness near the surface by the resolved eddies in the case of the gray-zone experiments, whereas moistening is prevalent over the oceans when the column physics is employed. This dryness in the gray-zone PBL scheme induces an enhanced evaporation of falling hydrometeors.