



## **The effects of sea surface temperature variation in the intertidal zone on coastal meteorology over the West Sea of Korea**

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In this study, the effects of sea surface temperature (SST) variation in the intertidal zone on coastal meteorology were analyzed using the Weather Research and Forecasting (WRF) and Regional Ocean Modeling System (ROMS) model over the West Sea of Korea. The intertidal zone over the West Sea of Korea, which is about 83 % (2,084.5 km<sup>2</sup>) of total Korea's intertidal zone, are alternately exposed and flooded with large tidal variation (up to 10 m). These analyses were performed based on two numerical modeling using different SST data: (1) daily SST data provided by the NCEP Marine Modeling and Analysis Branch (MMAB) (i.e. EXP-CNT) and (2) hourly SST data provided by the ROMS model with tidal effects (i.e. EXP-SST). The result showed that hourly SST decreased somewhat during high tide. Overall, moderate differences in most meteorological variable were shown at the sea adjacent to the intertidal zone during daytime. In particular, the decreases (up to 2 [U+2103]) in the near-surface temperature and the increases in the relative humidity (up to 10 %) were predicted to occur at some inland locations (e.g., the western area of the Seoul metropolitan area) during high tide.

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