

Thermal environment in sea faced district

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In the sea faced district, it is planned to utilize the wind path of a sea breeze to reduce the air temperature, especially in mid-summer season. The sea breeze temperature is generally lower the air temperature in a district, because the sea surface temperature (SST) is lower. However, in the sea front, some plants discharging high temperature water, e.g. thermal power plant, sewage treatment plant, are installed. Resultantly, the SST is not always lower than the air temperature. Here we have investigated the sensitivity of SST to the air temperature in district, by performing thermal and wind simulations. The numerical results show that there exists a critical SST, which is higher/lower than the air temperature of sea surface (T_a). This is because the vertical wind is enhanced when $T_a < \text{SST}$. We would discussed the resultant effects caused by this vertical ventilation.

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