An observational study of the sea breeze inhibition effect of the Shiodome skyscrapers
Hiroharu TANAKA *, Takehiko MIKAMI **
* Tokyo Metropolitan Univ; ** Teikyo Univ.

Abstract

Recently, it is often pointed out that the skyscrapers constructed in the Tokyo Bay area inhibit the sea breeze in daytime, and the temperature of leeward region is increasing. Then, we carried out various meteorological observations in the Shiodome district where the skyscrapers were overcrowded in the bay area, and measured the effect that the skyscrapers caused for the leeward region.

We measured many wind profile in the Shiodome district in the summer daytime. Pilot balloons were launched at the same time from three observational points around the Shiodome skyscrapers.

As a result, the southern sea breeze was observed on the windward side of the skyscrapers up to 400m height. However, wind direction changed suddenly by the 220m height on the leeward side of the skyscrapers. This height was almost corresponding to average height of the skyscrapers. Moreover, winds turned round the skyscrapers below this height. It seems that this result caught the influence of the skyscrapers for the sea breeze.