The role of the South China Sea in generating acoustic gravity waves resulted in meteotsunamis over the East China Sea
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Introduction
Meteotsunami is a kind of ocean long wave driven by atmospheric disturbance with the period as long as seismic tsunami. West Kyushu, Japan is one of the region that meteotsunamis occurred frequently especially in winter/spring season. Recent studies on the atmospheric systems resulted in meteotsunami over the East China Sea has been found that the so-called wave-ducting layer with its origin of the Middle (or South) China has covered over the East China Sea. (e.g. Tanaka, 2010). To generate such kind of atmospheric structure, the inter-ocean scale system might play important roles, for example the mixing of the moist air from South China Sea and dry air in the midtroposphere below the subtropical jet from India. This study is investigate the role of the South China Sea in generating atmospheric disturbance resulted in meteotsunami.

Local Observations in Kyushu, Japan

Upper Air Conditions

Discussion and Summary
The roles of the South China Sea in generating meteotsunamis over the East China Sea especially in winter/spring season
1. Higher evaporation in the winter/spring season (200 – 400 Wm\(^{-2}\)) than that in summer (50 – 150 Wm\(^{-2}\)) to grow the low troposphere thick.
2. A spell of the high positive anomalies of the low troposphere thickness arose during a week before (meteotsunami) events of East China Sea with the high latent heat transfer from the sea surface.
3. The horizontal divergence in the low troposphere (925-850 hPa) over the South China Sea along the edge of the Pacific high and convergence in the land area of southeast China.
4. The northward moisture transport of the low troposphere in the coastal region of the south China (in the present study shown as across 22.5 N line ). When the moist air moved toward the low level convergence zone in the land area, a zone of unstable layer in the midtroposphere was generated by the lifted moist air with mixing the dry air from Indian Ocean.