

# Occurrence of sea fogs over coastal shelf in the path of east Korea Warm Current

**Hyo Choi · Joon Choi\***

Department of Atmospheric Sciences, Kangnung National University,

\* Research Center for Ocean Industrial Development, National Fisheries

University of Pusan

The distributions of monthly averaged occurrence hours in Sokcho, Kangnung and Chungmu coastal seas for ten years(1981-1990) show very large magnitudes from April to August with a maximum in June, but after gradual decreases of occurrence hours are found until September, small magnitudes are observed from October to February with a minimum in December. The negative values of saturation mixing ratio differences are shown from April to August, when the large numbers of occurrence of sea fogs are detected. At this period the sea-air temperature differences show the negative values, then the stable atmospheric stability exists over sea surface. Sensible and latent heat fluxes during this period have still negative values, which imply the heat gain and the condensation in the sea surface. The monthly averaged winds are moderate to sufficiently cool warm air over sea surface. Thus, the advection sea fogs can easily form under this good condition. From September to March, the positive values of saturation mixing ratio difference are found, when the small numbers of occurrence of sea fogs are observed. So the large amount of water vapor from the sea surface evaporate into the atmosphere, then they should be saturated and condensed, causing the formation of evaporation sea fogs. At these times the sea-air temperature difference shows the positive values, then the existence of unstable atmospheric situation over sea surface results in evaporation from warm sea surface into the atmosphere. Sensible and latent heat fluxes have positive values, which mean the heat loss and the evaporation from the sea surface. The monthly averaged wind speed for these months are the relative strong to sufficiently spread out the water vapor into the environmental atmosphere and disturb the formation of sea fog and break out the existed sea fog, even though the evaporation would be expected to easily occur. Thus, the evaporation fog can not easily form under these wind classes. Ulsan has exceptional cases due to coastal upwelling phenomena.