



CO₂ Variation for photosynthesis and respiration at the coastal wetland: Sunrise and sunset conditions

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This study is in order to investigate variation of atmospheric CO₂ concentration in coastal wetland caused by photosynthesis and respiration, CO₂ concentration and temperature of atmosphere were monitored and analyzed for the sunrise and sunset conditions. Monitoring for the sunrise conditions were conducted in 3, 5, 7 August, 2010, and monitoring for sunset conditions were conducted in 2, 3, 4, 5 August, 2010. Monitoring equipment(VAISALA, GMP343) was installed before 1.5 hours from the sunrise and sunset time. Atmospheric CO₂ concentration and temperature at G.L.+0.1 m and G.L.+1.0 m points were monitored during 3~4 hours. For the sunrise conditions, CO₂ concentration after sunrise was lower than before sunrise. And for the sunset conditions, CO₂ concentration after sunset was higher than before sunset. Atmospheric CO₂ concentration of the G.L.+1.0 m point was higher than the G.L.+0.1 m point, and the differences between two points were less than 10 ppm. Atmospheric temperature of the G.L.+0.1 m point was higher than the G.L.+1.0 m point, and the differences between two points were less than 1°C. The relationships between atmospheric CO₂ concentration and temperature at this study area were showed that as the temperature was decreased, CO₂ concentration was increased. And as the temperature was increased, CO₂ concentration was decreased. Proceeding from what has been said above, it should be conclude that atmospheric CO₂ concentration in the coastal wetland was controlled by respiration of life(day and night) and photosynthesis of phytoplankton(day) in the mud flat.