PE-17 **Seasonal performances of photosynthesis and leaf water potential of two mangrove species in two different salinity sites of the Okukubi River**

○Rashila Deshar[1], Rempei Suwa[2] and Akio Hagihara[2]

[1] *Graduate School of Engineering and Science, University of the Ryukyus*
[2] *Faculty of Science, University of the Ryukyus*

The diurnal net photosynthesis and leaf water potential of two mangrove species, *Bruguiera gymnorrhiza* (L.) Lamk. and *Kandelia obovata* (S., L.) Yong, were studied. The diurnal photosynthetic capacity and depression in net photosynthesis of the two species were analyzed under field conditions. The depression in percentage in the sun leaves of each species was very high in the warm and the cold seasons. On the other hand, in the shade leaves of *B. gymnorrhiza*, the depression was almost negligible during the warm season, while was quite high in the cold season. The highest percentage in depression of photosynthetic capacity recorded during the study was 72% in *B. gymnorrhiza* sun leaves in the downstream site. The light curves also indicated that photosynthetic capacity was always higher in the sun leaves than in the shade leaves. The observed data indicated that midday depression of the sun leaves was high compared to the shade leaves. The water potential measured at predawn (Ψ_{max}) in each species was significantly dependent on rainfall and vapour pressure deficit (VPD). On the other hand, the water potential at midday (Ψ_{min}) in each species was dependent significantly on VPD only. The Ψ_{max} was lower in the cold and warm seasons for both species in the downstream site than in the upstream site, because Ψ_{max} depends strongly on soil water potential and is influenced by salinity. The Ψ_{min} in each species was lower in the downstream site than in the upstream site only in the warm season, because significant amounts of leaf water are lost owing to excessive transpiration in the warm season, and in addition water uptake is limited owing to high salinity conditions. The leaf water potential at turgor loss point (Ψ_{tlp}) had a lower value in the downstream site in the warm season, which corresponded to the result of Ψ_{min}. This may be the reason why both species decreased Ψ_{tlp} more in the downstream site than in the upstream site, in order to resist the water deficit owing to excessive transpiration and high salinity.