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CO₂ fluxes at an agricultural site In Ile-Ife, Southwest Nigeria**Adewale Iyiola Ajao**
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This study reports on the carbon dioxide (CO₂) fluxes at an agricultural site in Ile-Ife, southwest Nigeria. Half-hourly averaged flux data acquired by eddy covariance measurements conducted for a complete two-year period (2017-2018) over a grass-covered surface at Obafemi Awolowo University Teaching and Research Farm in Ile-Ife, Nigeria was analyzed. The results showed that CO₂ flux and its associated concentration increased rapidly from sunset to sunrise due to stable boundary layer conditions and nighttime soil respiration. Large transport of CO₂ fluxes was very prominent in the early morning when winds were strong and large air-masses leaving the site. Consequently, CO₂ concentration dropped as convective activities kicked off, enhancing photosynthesis. CO₂ flux and concentration exhibited good linear relationships with relative humidity but strong inverse correlations with temperatures and radiations at the study site. The dominant wind flow in the area, southwesterly was largely responsible for the transport and distribution of fluxes. The study concluded that, while some other meteorological variables showed variations with CO₂ fluxes both in the daytime and nighttime periods, wind velocity has little or no significant influence on the transport and distribution of CO₂ flux, particularly at nighttime. This may be attributed majorly to low frequency distribution of winds in the area.

Biography

Adewale Ajao has completed his PhD at the age of 39 years from Obafemi Awolowo University (OAU), Ile-Ife, Nigeria, and seeking postdoctoral studies from Imperial College, London and University of Reading, United Kingdom. He is the assistant coordinator of OAU-Met Station, a meteorological station situated at the Teaching and Research farm of OAU. He has published more than 15 peer-reviewed and conference papers in reputed journals and has served as a reviewer to some international journal outlets. He was part of the multidisciplinary project titled "Dynamics aerosol chemistry cloud intrraction in West Africa" funded by the european union under the grant agreement number 603502. He has attended conferences both locally and internationally and he's a member of Nigerian Institute of Physics and European Geosciences Union General Assembly.