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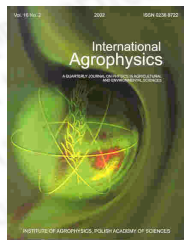
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Measuring wind gradients in agroforestry systems by shaded piche evaporimeters i. validation of the square-root dependence on wind speed

[\(get PDF\)](#) Kainkwa R.M.R.¹, Stigter C.J.²¹ TTMI-Project, Agricultural Physics Research Group, Physics Department, University of Dar es Salaam P.O. Box 35063, Dar es Salaam, Tanzania² TTMI-Project, Department of Environmental Sciences, Wageningen University, Duivendaal 2, 6701 AP Wageningen, Netherlands

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abstract There is a general need for cheap and simple but physically well understood equipment for multi-point field use in quantifying and understanding the tropical agricultural environment. Performance of shaded Piche evaporimeters in agroforest environments was investigated. Piche atmometers shielded at the upper side from solar radiation closely followed a model of square root of wind speed dependence of their evaporation, provided that its sensitivity to temperature and humidity variations and to differences in turbulence is borne in mind. During periods when gradients of air temperature and air humidity are small, data sets for at least several hours are recommended at sites with very low wind speeds. Length of measuring periods is not a limitation at sites and times with high wind speeds, when wind speed ranges are not too small.

keywords agroforest systems, anemometry, cup anemometer, Piche evaporimeter, wind reduction