

Reading Construction Technology and Management

Muhammad Abu Eusuf



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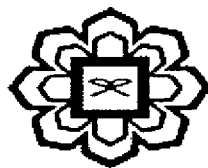
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Muhammad Abu Eusuf

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THE CAMPUS WEATHER OBSERVATION FOR ENVIRONMENTAL MONITORING

Muhammad Abu Eusuf, Ph. D

ABSTRACT

A Micro-scale modeling system is being applied on an experimental basis at the International Islamic University Gombak campus for production of real-time, high resolution weather forecasts. It is believed to be the first time that a real-time microclimate data has been monitored by the department of BTE- KAED routinely similar with other Malaysian university, although this data will transfer for meso-scale models to run in real local time in HUM- KAED-laboratories.

The constructed data-set is then transmitted by a software info-Gap when all data have been received, quality checked, and preserved. Regular inspection of the weather forecasts is serving as a medium for further improvements in the numerical model and is stimulating the development of techniques for evaluation of forecast skill.

The main focus of this paper is to discuss about the data acquisition and their effective utilization in microclimate research and development.

Keywords: AWS, Sensors, Microclimate, Micro and Meso-scale, energy consumption.

INTRODUCTION

Almost all biological activities, including that of humans, takes place in the lowest part of the atmosphere, known as the *atmospheric surface layer* (ASL). It is also called as the *atmospheric boundary layer* (ABL). The ASL or ABL is also vital for controlling energy and mass transfer between the surface and the atmosphere. Since meteorological conditions in the ASL affect the physical, chemical and biological processes taking place on the surface of the earth, monitoring these conditions is important for environmental research.

The set of meteorological parameters required for a study depends on the nature of the investigation. The background information for an environmental monitoring station includes wind direction, air temperature, relative humidity, albedo, and solar radiation, whereas the background meteorological data for monitoring the water quality should include wind speed, temperature, humidity, precipitation, evapo-transpiration, photosynthesis, and flux density.