

## Software approach towards understanding meteorological data for environmental monitoring and assessment of peninsular Malaysia

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**Abstract.** The concern for the global environment ensues researchers from various disciplines to work in collaboration to tackle with the issues of sustainability and environmental conservation for well-being of the people. In this study, we have selected and focused on few basic environment-affecting factors such as temperature, humidity, carbon dioxide and oxygen concentration level and referred them as meteorological data. In this paper, we present the development of our own customized hardware setup, environmental monitoring device (EMD) to obtain the data. Utilizing the relationship among these basic parameters, represented in the form of formulas and equations, we tried to encode them using Matlab programming. Data visualization is achieved by plotting the graphs of basic parameters obtained from EMD as well for the derivatives using Matlab programs.

**Keywords:** meteorological data; temperature; humidity; carbon dioxide; oxygen; software; Matlab; environmental monitoring device

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### 1. Introduction

Climate change is changing our economy, health and communities in diverse ways. Carbon dioxide and other global warming pollutants are collecting in the atmosphere like a thickening blanket, trapping the sun's heat and causing the planet to warm up (IPCC 2007).

The anthropogenic driver of climate change is the increasing concentration of greenhouse gases (GHG) in the atmosphere. Carbon dioxide (CO<sub>2</sub>) is the most important anthropogenic GHG, and the global increases in CO<sub>2</sub> concentration are due primarily to fossil fuel use and land use change. The increase in GHG concentrations in the atmosphere affects processes and feedbacks in the climate system. Qualitatively, an increase of atmospheric GHG concentrations will lead to an average increase of the temperature of the surface-troposphere system (Downing 2012).

Although there exist controversies and debates on climate change and global warming issues, scientific research strictly based facts and figures could help in exploring the truth, thus could distinguish exaggerated predictions of natural mechanism and false alarms.

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