Universiti Teknologi MARA

Analysis of Air Pollution Index in Malaysia by using Fuzzy Logic Air Quality Index (FLAQI)

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STUDENT DECLARATION

I certify that this report and the research to which is refers are the product of my own work and that any ideas or quotation from the work of the other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discpline.

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ABSTRACT

Air pollution refers to the release of pollutant into the air that are detrimental to human health and the planet as a whole. In Malaysia, the index of air pollution was generated by Air Pollution Index in Malaysia (APIMS) under Department of Environment (DOE). The objectives of this study is to analyze air pollution in Malaysia by using fuzzy logic and to determine the performance of Fuzzy Logic Air Quality Index (FLAQI) by comparing the value with the APIMS. The method used in this system is fuzzy logic system. This method is more preferable since it is user friendly and the rules that have being setup is from the hierarchical fuzzy systems. Besides, the membership of each inputs and output is entered in the MATLAB software in order to generated the output of FLAQI based on parameters (suspended specific matter of less than 25 microns in size 5, ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide and suspended particular matter of fewer than 10 micron) and the IF-THEN rules. There are 362 data that have been analyzed and compared to the actual data from DOE. Therefore, fuzzy logic approach can be used to generated the air pollution index as it shows 82.32% of accuracy between actual data with the output of FLAQI.

Keywords: Air Pollution Index (API), Department of Environment (DOE), Fuzzy Logic Air Quality Index (FLAQI) model, MATLAB.

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