

UNIVERSITI TEKNOLOGI MARA

**TIDAL ANALYSIS: THE ESSENTIAL OF SIGNIFICANT CONSTITUENT
FOR TIDAL PREDICTION AT PENINSULAR MALAYSIA**

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of the requirements for degree of
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I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. The project/dissertation is original and it is the result of my own work, unless otherwise indicated or acknowledged as reference work.

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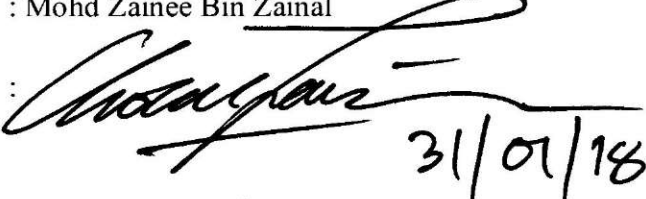
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ABSTRACT

Tidal phenomenon is one of natural occurrence with fascinating event that is actually stored various knowledge which capable to be used as further research study. In previous century, tidal analysis had become a tool for marine development which contributes to development of the port and the bridge. Due to the study conducted, the previous implementations of constituents are remains based on Rayleigh criterion which help on classifying the suitable parameter to be used in harmonic least square adjustment. Hence, the aim of this study is to identify the essential of significant constituent for tidal prediction which becomes a new implementation on creating a tool for tidal analysis. The method of this study are being derived into three parts which are: development of new program for tidal analysis by using MATLAB, identification of significant constituent by using statistical evaluation and reduction of the number constituent used in Harmonic analysis. The program had been evaluated with the existing software U-TAPS and the actual observation data by using F-variance ratio test. Until the program is proven to be significantly similar to the existing data, the reduction of the constituent cannot be made. The final result from this study shows that, the F-calculated of new development program compared to existing software and actual data are 1.071 and 1.045 respectively which indicates the statistical evaluation by using F-variance ratio test at 95% confidence interval is passed. Next, due to the reduction of the constituent used for tidal prediction, the error is increased constantly which is still below millimetre level. This result indicates that, the need of significant constituent is not essential due to the increasing of error against the total number of time for tidal prediction. Therefore, the essential of significant constituent can be neglected based on the outcome of the study.

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