

PROPOSAL REPORT

THE MATHEMATICAL MODELLING OF SHALLOW WATER WAVE

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UNIVERSITI TEKNOLOGI MARA

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1. INTRODUCTION

Waves are one of the most fundamental motions: waves on the water's surface and of earthquakes, waves along springs, light waves, radio waves, sound waves, waves of cloud, waves of crowds, brain waves, and so forth (Toda, 1989).

Waves are recorded, and records are analyzed. In the case of sound waves and light waves, it is customary to analyze a wave as the sum of simple sinusoidal waves. This is the principal of linear superposition.

However, when we observe water waves carefully, we can see that the linear superposition principle cannot be applied in general, except for very small amplitudes. The study of water waves of finite amplitude was one of the main topics.

According to article from Wikipedia (2014), in fluid dynamics, dispersion of water waves generally refers to frequency dispersion, which means that waves of different wavelengths travel at different phase speeds.

According to the article in Star online the flood that occurred in Kelantan such as Kuala Krai, Pasir Mas, Tanah Merah and others were the worst flood in 2014. According to Robinson (2014) when a head storm develop and moves downstream, then a rapid rise of water in a creek was occurs that we called flood wave. These was happened in Kuala Krai and many things were

destroyed caused of the flood.

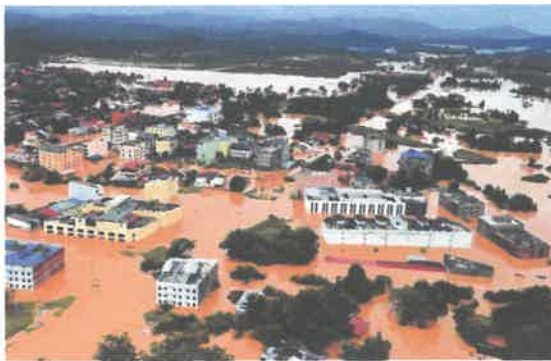


Figure .1: Flood in Kuala Krai, Malaysia (sources from Borneo Post online)