

Pariwat Rodnual 2014: Crash Estimation Model for Bangkok Expressway System  
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Road accident is one of the major causes of fatality in Thailand. Especially, high speed facilities such as expressways and motorways cause greater severity. Road accidents are caused by three main factors including driving behaviors, vehicle performance, road geometries and environment. This research aims to (1) investigate the road geometric factors affecting accident occurrences on the toll roads and (2) develop a statistical model to estimate number of accidents. This study uses three years of the historical accident data from January 2009 to December 2012 of toll roads operated by the Expressway Authority of Thailand (EXAT) and Department of Highways (DOH). Crash estimation model is were developed using Poisson and Negative binomial regression models. The factors used in this study include traffic volume, segment length, number of lanes, land width, shoulder width, characteristics of road, area type, average speed, standard deviation of speed car, 85thpercentile speed. As a result the crash estimation models resulted in this study can be used to estimate the number of accidents on the toll roads.

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