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## Improvement on tsunami casualty model and its application as the basic approach to design tsunami evacuation route

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An improvement of tsunami casualty model by utilizing better description of human body based on anthropometry data was conducted to obtain better understanding about human ? flow interaction that lead to tsunami casualty. The absence of the model verification from previous researches is now fulfilled. The proposed model is applied in Padang city, Indonesia, to assess the feasibility of roads that will be used for tsunami evacuation. The city is under threat of possible giant tsunami in the future due to the existing seismic gap in Mentawai fault zone. The term of Tsunami Casualty Index (TCI) is used to express the ratio of the time of tsunami inundation that lead to a dangerous situation to human, with the total time of the tsunami inundation. The roads with TCI more than 50% obtained from the model should be considered to be avoided during evacuation. In such areas, additional tsunami evacuation shelter may be needed by the community the possibility of tsunami casualty in the respective areas.

Keywords: Tsunami casualty model, evacuation, tsunami casualty index