ABSTRACT SUBMISSION

Title: Safer walking during winter time

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Abstract

Icy and snowy walkways are very common in Finland during winter. Slipperiness on walkways increases the risk of pedestrians' slipping accidents. Almost every second person slips annually in Finland and around 50 000 persons are injured and need to visit the hospital. Big part of the accidents happen outside on winter time when ground is snowy or icy. Emergency departments are crowded during the most slippery days and that happens typically 5-15 times per winter. The costs of the slipping accidents are around 420 million euros yearly, that sum includes costs in health care, lost workdays and general welfare. The total costs of slipping accidents are higher than the costs related to traffic accidents in Finland. There should be lots of possibilities to reduce the amount of the slipping accidents and costs related to accidents.

Finnish Meteorological Institute (FMI) has developed a numerical model that simulates the level of slipperiness on the walkways. Also, forecasts are available and FMI is giving warnings for public when very slippery walkway condition is expected. The model classifies the expected walkway slipperiness into three classes; normal, slippery and very slippery. The extra attention is needed if the walkways are icy. However, the most slippery cases exist when the walkway is covered by ice and there is water or light snow above the ice layer. Sometimes packed snow can be very slippery as well.

FMI is participating a project that aims to reduce the amount of slipping accidents during the winter time. FMI's pedestrian walkway condition model is developed during the project and the postmen of Finnish Postal Services (Posti) are the test users of FMI's warning service. Also, postmen are making their own measurements of the slipperiness daily. Posti is collecting data of the postmen's slipping accidents. For example the information of the injury is registered as well as the duration of the sick leave.

Finnish Institute of Occupational Health (FIOH) is also a partner of the project and they are doing friction measurements by their slipmeter which measures the friction between surface and shoe sole. The results of the FIOH's friction measurements and postmen's slipperiness measurements are compared against FMI's slipperiness class. Also, the peak days of the slipping accidents according to Posti's database and insurance statistics are studied and compared. The statistics of the slipping accidents and the results of the verifications will be presented in this study.

Approval Confirm

Website Yes

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Registration Confirm

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Presentation Breakout Session

Biography Marjo Hippi received the M.Sc. degree in 2004 from the University of Helsinki. She has six years of experience in weather forecasting as a duty forecaster. In the last years she has been associated with the developing of FMI's road weather forecasting model and participating in several ITS projects dealing with slipperiness, road weather and public safety on the roads. She is presently doing her postgraduate studies in the Meteorological Applications research group of FMI.

Key words Safety, slipperiness, winter

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Permission Yes

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