

# Model predicts motorway journey time reliability

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For car users and drivers of freight vehicles on motorways, being able to rely on the time taken to complete a journey is as important as the actual duration of the trip itself. For that reason the Ministry of Transport, Public Works and Water Management has listed the improvement of the reliability of door-to-door journey times as one of the main objectives in its latest Mobility Memorandum.

PhD candidate Huizhao Tu has developed a model that can calculate the reliability of journey times and the effects traffic measures and the design of roads have on it. Tu was awarded his doctorate on Tuesday 15 April 2008 on this subject at TU Delft in the Netherlands.

Motorway journey times can be rather unpredictable: one day everything will be fine, while the next, the traffic will be rock solid, even though the weather conditions and the quantity of traffic appear to be the same. For commuters and transporters the fact that journey times are so unpredictable is very annoying. Moreover, they factor this into their journey plans, and this leads to even more uncertainty about how long trips will take. Up to now, little was known about the mechanism that caused journey times to be so unreliable or the factors that played a role.

TU Delft PhD candidate Huizhao Tu has analysed journey time information covering several years for various motorways in the Randstad region. He found – naturally enough – that the busier the roads, the more unpredictable the journey time was. This aspect is important even where traffic intensity is far below the capacity of the

road. Journey times are also unreliable on motorways with many junctions and on highways with short entrance and exit roads. It goes without saying that this too has an important influence on the predictability of journey times.

Huizhao Tu's model calculates the effects of traffic measures (such as the closure of certain road sections and the introduction of maximum speed levels) and of the design of motorways (such as the length of entrance and exit roads) on the predictability of journey times. The model can therefore help contribute to improving the predictability of journey times.

Source: Delft University of Technology

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