TNO Science and Industry

TNO | Knowledge for business

VERSIT+

TNO state-of-the art road traffic emission model

TNO has developed the state-of-the art emission model VERSIT+. This suite of models is used to predict emission factors and energy use factors that are representative for vehicle fleets in different countries. Emission factors are differentiated for various vehicle types and traffic situations, and take into account real-world driving conditions. VERSIT+ is unique in that it yields consistent results on national, regional and local scales. It can be used for investigating national greenhouse gas reduction strategies but also for local air quality improvement.

The emission factors are used by public and private organisations for environmental monitoring as well as for assessment of environmental effects of traffic measures and vehicle technology incentives. TNO is the sole supplier of primary data in this field.

Based on measurements of current vehicles and sound knowledge of future emission reduction technologies, VERSIT+ can project car emissions into the future. Emission prediction for road traffic (trucks, buses, passenger cars and motorcycles) is important for governments to make well-informed decisions regarding clean vehicle technology incentives.

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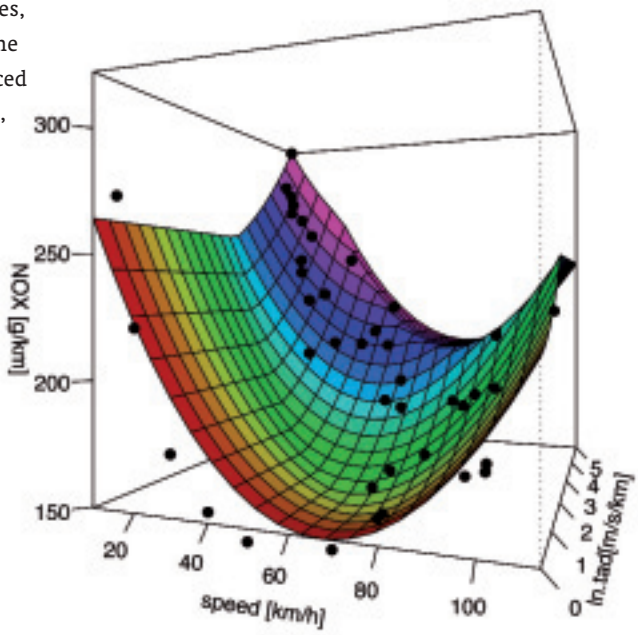
Emissions per car can vary widely, due to differences in vehicle technology and driving behaviour. VERSIT+ is based on a database of 12,000 measured driving cycles, mimicking all aspects of real-time driving behaviour. Using advanced statistical modelling techniques, VERSIT+ finds the best fitting emission factor equation for any given driving pattern.



fitted surface and original datapoints

The newest development is to link VERSIT+ directly to traffic simulation models. This allows for direct evaluation of impact of traffic measures (such as green wave, or trajectory control) on the air quality. This is vital information for local governments in their battle against local air pollution.

Public Sector

Environmental Studies and Testing

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