

## **Uncertainties in eco-driving instructions and perceptions about fuel consumption reduction applying eco-driving techniques**

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### **Abstract**

Vehicle fuel consumption is important on micro level for individual motorist to reduce mobility expenses, on company level to increase profits and keep competitiveness, on national level to be less dependent on fuel imports and on global level to reduce greenhouse gas emissions. As a result, many national governments, nongovernmental institutions, private companies, researchers and motoring enthusiasts have formulated eco-driving hints, rules and strategies. Since most of the eco-driving instructions are intended for every motorist, quite often they are made as clear and simple as possible. This has resulted in misinterpretations, inconsistencies and uncertainties of certain concepts not just by final users but also by new rules developers and disseminators and even by researchers. The analysis of eco-driving research papers and publicly available instructions is done with an objective to formulate the strategies for city driving fuel consumption tests comprising various driving styles. The study is performed by analyzing knowledge from internal combustion engine theory and vehicle dynamics. The conclusions show that translation, re-defining and dissemination of eco-driving suggestions require engineering knowledge, understanding of drivers' behavior and foreseeing the driving conditions where the clues would be applied. The usage of the driving strategies has to be checked against the vehicle manufacturer's instructions. Analysis of various driving hints allows formulation of eco-driving rules for particular vehicles and driving environments.

**KEY WORDS:** *eco-driving, fuel consumption*