INFLUENCE OF ROOF-RACK ON FUEL CONSUMPTION ON AN AUTOMOBILE FUELED WITH LPG

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Abstract Roof-rack mounted on the roof of an automobile influence a lot the fuel consumption of an automobile. The intention of the paper is to assess the increase of the fuel consumption in the case that a roof rack is mounted on the roof of an automobile, even if it is not loaded with any luggage. Measurements were made at different speeds starting with 60 km/h up to 120 km/h. A comparison is made between the fuel consumption of the same automobile without the roof-rack in previous experiments and the actual condition. Obtained data are reliable and may be trusted due to the R2 coefficient of the implied equations.

1. INTRODUCTION

In order to reduce fuel costs, one solution consists in modifying gasoline engines for running with LPG – liquefied petroleum gas. This paper is concerning with a carburetor engine on a Daewoo Tico model car and its adaptations measuring the fuel consumption in the fifth gear at constant speed for different speeds. On the roof of the automobile was mounted a roof-rack for luggage for assessing the influence over the fuel consumption.



Fig.11. Comparison between fuel consumption with and without roof-rack in fifth gear

Fuel consumption in liters per 100 km versus speed No. Speed [km/h] Fuel consumption with Fuel consumption without Difference in roof-rack roof-rack fuel [l/100km] [l/100km] consumption 4.754 1. 60 5.69 0.936 2. 6,625 5,489 1,136 80 З. 100 8.4 7,15 1.25

Table 2

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