

ENERGY HARVESTING POTENTIAL FROM VEHICULAR TRAFFIC CROSSING ROAD HUMPS IN THE CASE OF SLOVENIA

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Based on the fact that in Slovenia the main roads are planned in accordance with the valid regulations, which do not specifically separate the roads according they are inside or outside urban areas, such infrastructures were built on the criteria of relevant capacity (normally wide and narrow multi or single lane roads). With the goal to guarantee the quality of life and especially traffic safety (decrease of average speed in urban areas) traffic calming measures were needed. In most cases in urban areas speed humps and platforms were installed, which effectively slow down the speed, but on the other hand massive increase ground-borne vibrations, produced by vehicles passing over these “road irregularities”.

In many countries, such devices have been the subject of careful investigations and they are mostly avoided by more adequate design of roads and the entire public spaces. On the contrary, no systematic approach and measures have been implemented in Slovenia, which results in a very high number of speed humps in residential areas.

The paper presents the results of measurements of ground borne vibrations caused by a variety of speed humps (various forms, sizes and materials). Based on the results the potentials and possibilities of energy harvesting from vehicle traffic crossing speed humps that are typical for Slovenia will be prepared.

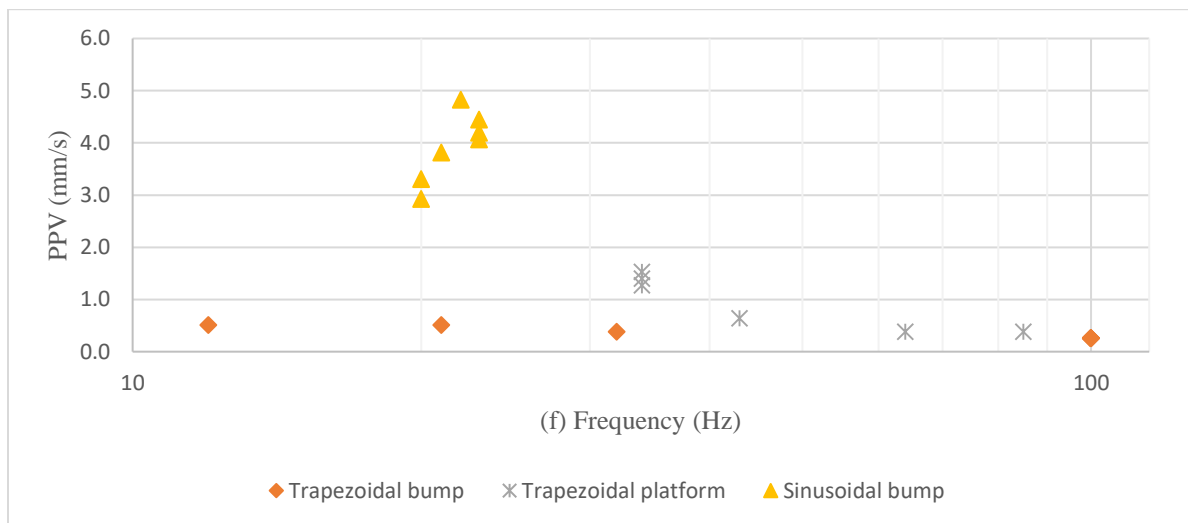


Figure 1 – Results of vibration measurements at road humps (PPV - Peak Particle Velocity)