

The effect of traffic management on CO₂ production

B. Jereb, I. Čeh and M. Kamplet

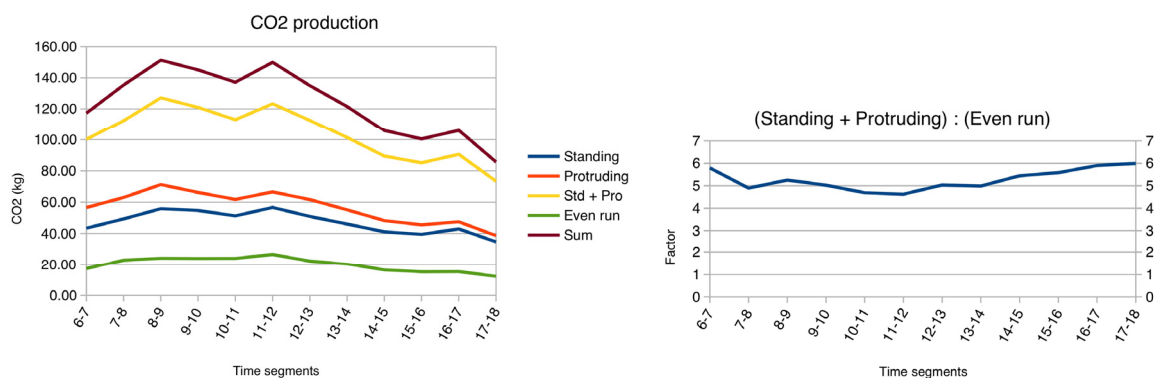
Faculty of Logistics, Mariborska 7, 3000 Celje, Slovenia

e-mail: borut.jereb@um.si

Abstract

Greenhouse gas emissions in Europe have plunged to the lowest level ever recorded after the EU's member states reported an estimated 23% drop in emissions between 1990 and 2014 [1]. Still, urban traffic is a major source of air pollution in cities. Urban mobility accounts for 40 % of all CO₂ emissions of road transport and up to 70% of other pollutants from transport [2]. Current simulations, based on past data, predict that CO₂ emissions from transport will be one third higher than their 1990 level by 2050 [3]. Congestion costs will increase by about 50 % by 2050 [3]. It is therefore important to investigate the effect of traffic management on CO₂ production and other transport-produced emissions in urban areas. The effect of implementing green waves (smart synchronization of traffic lights on a road section) was investigated on a real case of a road intersection in Celje. The results show that in average CO₂ emissions are 5 times higher in the case of braking and accelerating vehicles due to red traffic lights as compared to an even and undisturbed traffic flow enabled by the green wave.

Keywords: Traffic management, CO₂ emissions, transport, green traffic wave



References

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