Evaluation of Driver Compliance to Displayed Variable Advisory Speed Limit Systems: Comparison between Germany and the U.S.

Variable Speed Limit (VSL) and Variable Advisory Speed (VAS) systems are applications of a growing field of active traffic management systems (ATM). This technology aims to improve safety while reducing congestion and emissions. VSL is common on German freeways, harmonizing traffic flow during congestion and weather events. Portland, Oregon installed a VAS system (advisory meaning it is not automatically enforced) on an eleven km (7 mile) segment of heavily congested urban freeway. The Portland region maintains archived, high-resolution data of both VAS sign messages and speed detection loop feedback, permitting reconstruction of traffic and sign data. This work analyses over 30 days of archived data from the Portland site in order to study driver compliance to the VAS signs. The focus is to suggest methods and parameters to score system performance. Such an analysis could benefit new rollouts of VAS corridors by providing system performance feedback and shed light on options for improving system performance.