

Road Weather Information System Reference Data

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Abstract

Road Weather Information Systems have been in place for a number of decades since their introduction in the latter half of the 20th Century. The earliest systems comprised of static weather stations located next to the road side with various atmospheric sensors and typically an embedded pavement sensor. These systems were originally designed for the purpose of winter road maintenance and as such were normally found in snowbelt countries. Despite the high return on investment, these systems were viewed as expensive, such that the placement of roadside weather stations has generally been limited to major highways with typical spacing anything between a few kilometers, but more generally tens of kilometers.

Over the years there have been significant developments, including the introduction of remote pavement sensors that have allowed additional parameters to be measured and also given rise to fully mobile sensing when mounted on vehicles. The earliest of these measured just pavement surface temperature, but nowadays can also measure a multitude of parameters, for example surface state and grip. One of the main advantages of these mobile observation platforms is that the entire road network can be measured rather than just single point data from the static systems. Since these mobile systems generally cost less there is a common thought that mobile measurements will spell the decline of static systems, especially since a number of weather parameters can be derived from the increasing intelligence of modern vehicles, such as taking canbus information including the likes of traction control, windshield wipers and temperature sensors etc.

This paper intends to explain how the need for static systems will remain in to the foreseeable future, as well as suggestions for their improvement.

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