

Topography and its effect on our highways

Presented by Highways England

Highways England is the government-owned company charged with operating, maintaining and improving England's motorways and major A roads, referred to as the Strategic Road Network (SRN).

This challenge wishes to explore numerically efficient methods to integrate topographic features into two areas of interest for Highways England, deployable at scale.

1. Congestion (average speed) vs Topography

We measure average speed across approximately 17,000 sections of road to understand how the SRN is performing continuously throughout the day.

These sections of road have been mapped against a linear network model built of line features but don't account for terrain topography. We would like to understand if any relationships exist between the average speed on network sections and identifiable topographic features, and if possible if these can be modelled.

2. Weather vs Topography

This is similar to the above problem in that Highways England cannot predict how weather interacts with the network and particularly where aquaplaning or flooding could occur. It is felt that this might be a harder problem due to the lack of drainage data, but novel approaches which might be used to signify risk areas is a real challenge which is currently of interest.

Resources available for the challenge:

- Traffic data (1 month)
- Linear Network model
- Open source datasets can also be used for this challenge