Paper Title: A new approach to link transport emissions and air quality: An intelligent transport system based on the control of traffic air pollution

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Summary

1.1 Motivation/purpose/aims/hypothesis

The impact of pollution has been detrimental and little efforts have been made to overcome these drawbacks. Therefore, the main objective of this paper is to assess a new framework that draws a connection between transportation and air pollution. The paper aims to help make more useful decisions in reducing these impacts.

1.2 Contribution

One of the key contributions in this paper is the real time measurement of air pollutant concentrations and traffic pollution using their integrated model. Thus, for a continuous environment, the results can be used as a validation for different solutions.

1.3 Methodology

For the model, the methodology was done in a few steps, the first one being requirement analysis where it is divided into a few steps to make sure that everything is valid. The most suitable system structure was used after hypothesis testing, which included a main data center (DC) which had control of four subsystems: a traffic-environmental modeling tool (TEM); a network of air quality monitoring stations(AQMS); a network of private traffic monitoring stations (TMS) and a Public Transport Management Subsystem (PTMS).

1.4 Conclusion

The model created forecasts emissions and air quality while certain measurements validate them. This model is implemented and tested in Beijing.

Limitations

2.1 First Limitation/Critique

One of the limitations is that for some particles, due to less evidence of its cause and effect, the model predictions may be doubted as the input itself is uncertain.

2.2 Second Limitation/Critique

Some of these models require a large amount of data and time to obtain results. Thus, even after obtaining results more time is required for stakeholders to validate the result.

Synthesis

The proposed model could be used if there is enough data and time available to obtain trustworthy results. After validating the results, steps can be taken to improve the air quality.