

Incorporating Moving Authority Limits Into Driving Advice

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Abstract : Driver advice systems are used by many rail operators to help train drivers to improve timekeeping while minimising energy use. These systems typically operate independently of the safeworking system, because information on how far the train is allowed to travel -the "limit of authority"- is usually not available as real-time data that can be used when generating driving advice. This is not an issue when there is sufficient separation between trains. But on systems with low headways, driving advice could conflict with safeworking requirements. We describe a method for generating driving advice that takes into account a moving limit of authority that is communicated to the train in real-time. We illustrate the method with four simulated examples using data from the Zhengzhou Metro. The method will allow driver advice systems to be used more effectively on railways with low headways.

Keywords : railway transportation, energy efficient train operation, optimal train control, safe separation

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