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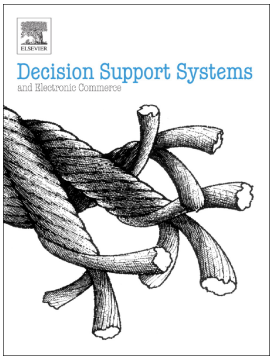

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The Truck Driver Scheduling Problem with Fatigue Monitoring

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Abstract

In the United States, approximately 4,000 fatalities due to truck and bus crashes occur each year. Of these, up to 20% are estimated to involve fatigued drivers [48]. However, no model currently exists that incorporates a measure of drowsiness or fatigue into the Truck Driver Scheduling Problem (TDSP). We introduce a fatigue-aware model for determining the optimal schedule for a driver while maintaining an acceptable level of alertness as well as abiding by time windows and hours of service (HOS) regulations. Additionally, we examine a shortcoming in existing regulations, specifically related to assumptions made about the rest and alertness of a driver at the start of the workweek.

KEYWORDS
Vehicle Scheduling, Scheduling Policies, Scheduling Systems, Alertness, Fatigue Management