

Editorial: Automated Driving

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This issue of the International Journal of Intelligent Transportation Research publishes six papers on automated driving.

The objective of this issue is to review current research and development studies on automated driving. Six papers on automatic driving, four of which are related to the research on the Energy Intelligent Transportation System (ITS) project funded by the New Energy and Industrial Technology Development Organization (NEDO), are published. In this project automatic platoon driving consisting of four trucks was developed, establishing reliable international evaluation methods for the ITS.

The first four articles are studies related to the Energy ITS project.

The first article deals with a Cooperative Adaptive Cruise Control (CACC) system, and proposes and develops control procedures and inter-vehicle communication schemes to implement a CACC system for heavy-duty vehicles.

The second article introduces a braking system for automatic platoon driving. To guarantee safety, a secondary braking system that works in emergency situations was installed. In addition a system was developed to change the maximum deceleration of braking, to avoid collisions between the preceding and following trucks. A

schematic shows the brake system for automatic platoon driving.

The third article proposes a method for identifying the mass and center of gravity of a truck which vary widely, depending on the condition of the load. Automatic platooning control is not feasible without identifying the loads.

The fourth article proposes a method for establishing the position of a truck while travelling in a tunnel, where a GPS sensor cannot function. By detecting emergency telephone indicators with infrared cameras, the position of the truck can be correctly identified.

The other two articles concern a driver assist system. The fifth proposes a driver model for a microscopic traffic simulator, developing a model for following a car using adaptive cruise control and verifying behavior through computational platoon experiments with four cars.

The last article is about an assist system for less skilled drivers, proposing a system that judges the skill of drivers by extracting features of their driving operations and examining performance through experiments using a driving simulator.

Automated driving has become one of the research topics attracting engineers and people in the industry as well as researchers in the control field. Although the six papers published in this special issue do not cover all the technologies needed for automated driving, we would be delighted if it helped promote the development of automated driving in the future.

With regards

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