

A Train Position Detection System Using Inertial Sensors Together with Tachometer Generators

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Generally tachometer generators are used to calculate the train running distance under on-board systems, and transponders are used to detect the train position. However, as for this configuration it is required to compensate the effects caused by wheel slips and skids, and it is necessary to put a lot of transponders. Therefore, we are developing a method using both tachometer generators and inertial sensors to calculate train running distances independent of the number of wheel rotations and to detect train positions with the curvatures of rails. The results of simulation analysis using managed time stamped data show that it is possible to compensate the train running distance, even though there are wheel slips and skids, and to detect train positions with this method.