

**Track Monitoring Based on Both the Axle Box Vertical Acceleration
of the Leading Axle and That of the Trailing Axle**

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Checking track deterioration and/or picking up the location of deteriorated track where maintenance work is due are generally carried out based on the track irregularities measured by track inspection car and/or the inspection report on track materials/components implemented by track patrol. If an appropriate on board measurement system can take the place of the above mentioned track patrol, it can be expected that track maintenance work related to inspecting track condition can be greatly reduced. In this paper, focusing on vertical axle box acceleration to assess track condition, computer simulation and on board measurements were carried out to evaluate the proposed system which is based on vertical axle box accelerations measured for both a leading axle and a trailing axle. As a result, it has been found out that some track conditions can be evaluated by suitably filtering vertical axle box acceleration or by taking due consideration on the difference between the axle box acceleration of the leading axle and that of the trailing axle of the same bogie.