

## **Clarification of Lift Force Variation Mechanism of a Pantograph Head of Shinkansen**

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It is important for the Shinkansen pantograph head to have suitable aerodynamic lift force characteristics. Moreover, it is also necessary that the lift force variation due to the wear of the contact strip is within the allowable range. So far, the relation between the flow field around the pantograph head and the lift force characteristics has not been clarified. Therefore, the development of the pantograph head has been promoted in the wind tunnel test by trial and error. In this study, the lift force variation mechanism of the pantograph head is clarified by applying wind tunnel tests and CFD analysis.