Influence of Bogie Components on Aerodynamic Bogie Noise Generated from Shinkansen Trains

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Aerodynamic bogie noise generated from Shinkansen trains is the main source of the noise when they are running at above 300 km/h and its reduction is one of the important issues in conserving the environment along the railway lines. In order to reduce the bogie noise efficiently, it is important to evaluate the contribution of the bogie components to the aerodynamic bogie noise. The purpose of this paper is to estimate their contributions at the measurement point close to the track. The wind tunnel test was carried out to estimate the two dimensional sound pressure level distributions around the bogie using a two dimensional microphone array. Both the noise contribution of each component and the measures to reduce the aerodynamic noise are investigated by arranging the component in the bogie model.