Numerical Analysis on Mechanism of Aerodynamic Noise Reduction in Bogie Area by Rounding Corners of Bogie Cavity

Tatsuya TONAI　　Toki UDA

Aerodynamic noise radiated from running high-speed trains is attracting attention from the environmental point of view. Bogie areas are known to be the main sources of the aerodynamic noise. Rounding the four corners of the bogie cavity has been proposed as a measure to reduce bogie aerodynamic noise, and wind tunnel tests have confirmed its effectiveness. However, detailed flow fields around bogie area have not been identified and the mechanism of noise reduction by such measures remains unclear. In this study, numerical analyses on the flow field near the bogie area were conducted to investigate the changes in the flow field caused by the proposed measure and to discuss the reduction mechanism.