

A Numerical Prediction Method of Aerodynamic Noise Applicable to High Frequency Problems

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In the former studies, computational simulation of sound generated aerodynamically was restricted to low-frequency range because the approximation of acoustical compactness was used in the mathematical models. In this study, the problem is formulated in the frequency domain by extending the theory of vortex sound proposed by Howe, and is extended to high frequency range by solving Green's functions adapted to boundary shapes for each frequency. Aerodynamic noise generated from a pantograph partial model is predicted with the newly developed method and the prediction result is compared with results of wind tunnel test.