

Aerodynamic Noise Simulator COSMOS-V

Aim

To develop simulation technology that can predict and evaluate noise caused by airflow while vehicle is running, so as to help clarify the phenomena and improve the efficiency of product development.

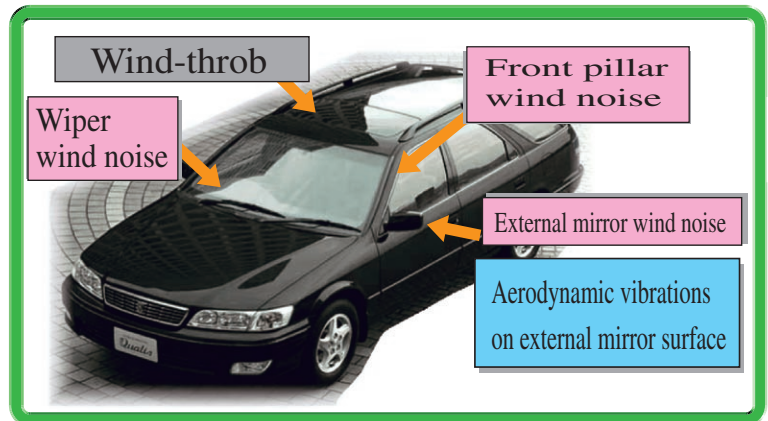
Method

Accurately calculate temporally fluctuating airflow, and predict noise such as wind noise and wind-throb*, as well as vibrations caused by pressure fluctuations.

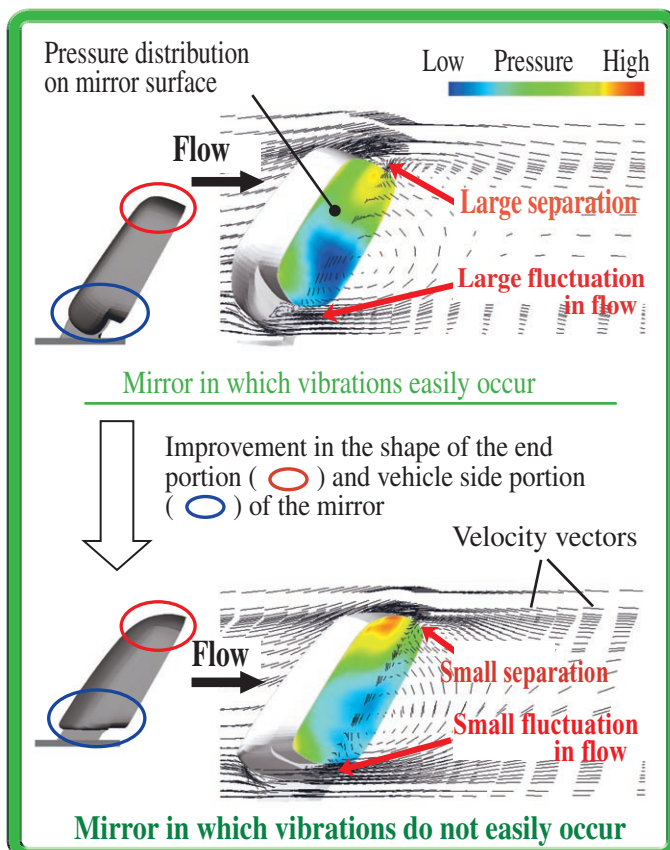
*The low-frequency resonance that occurs in vehicle cabin when vehicle is running with open sunroof

Characteristics

- Using the latest numerical analysis technology, temporal fluctuations in airflow can be calculated with a high level of computational accuracy.
- Development of a mathematical model that expresses Fluid-Resonant Oscillation has enabled the prediction of wind-throb. (First in the world)

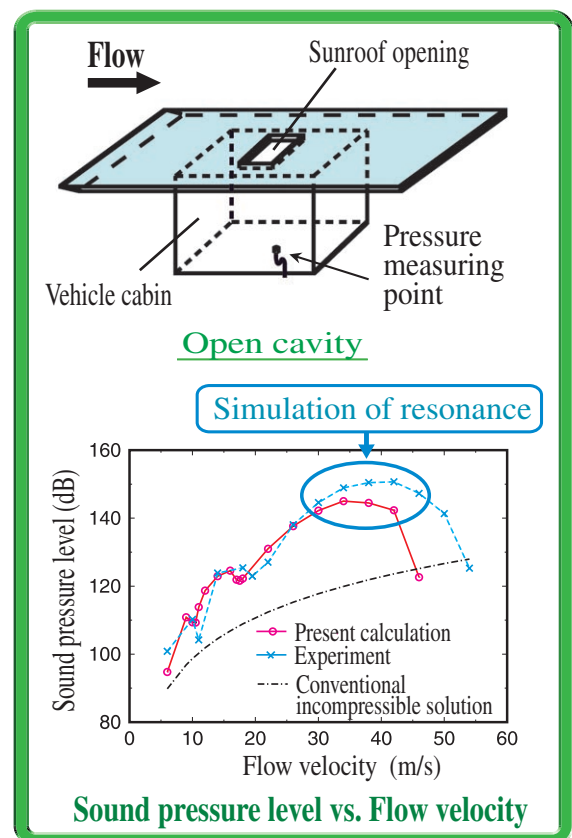


Application



Prediction of aerodynamic vibrations on external mirror surface

Aerodynamic noise of automobile



Sound pressure level vs. Flow velocity

Prediction of wind-throb