

SAKAMOTO LAB.

[Measurement and Evaluation of Sound Environment in Urban City]

Advanced Mobility Research Center

Environmental Acoustic Engineering

 Department of Architecture,
Graduate school of Engineering

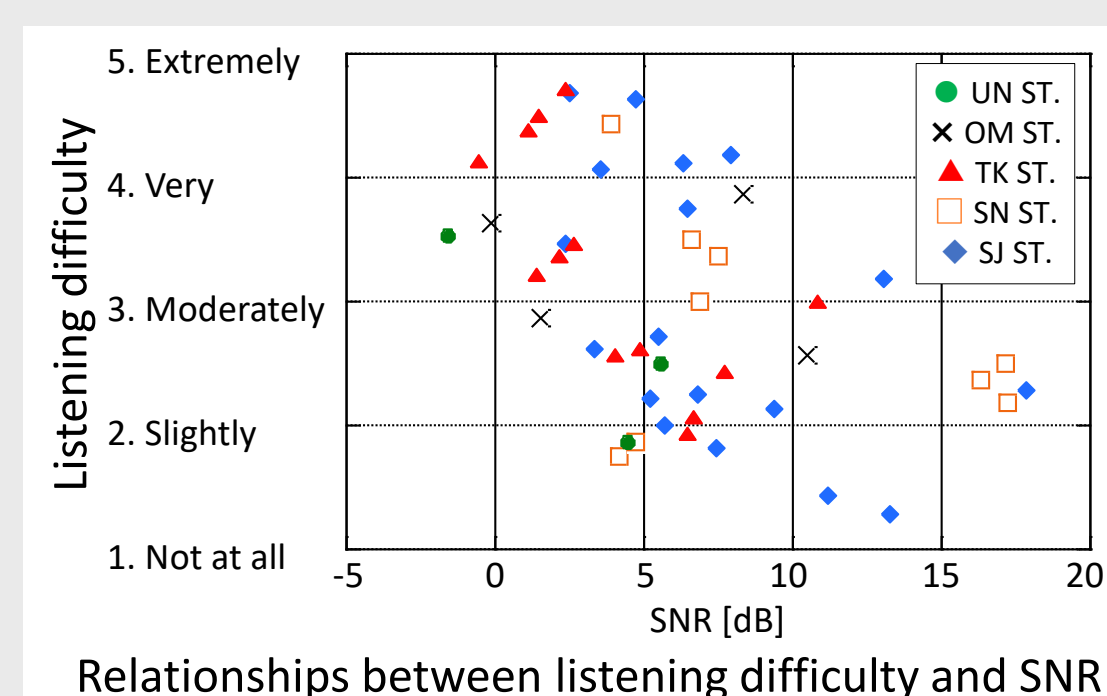
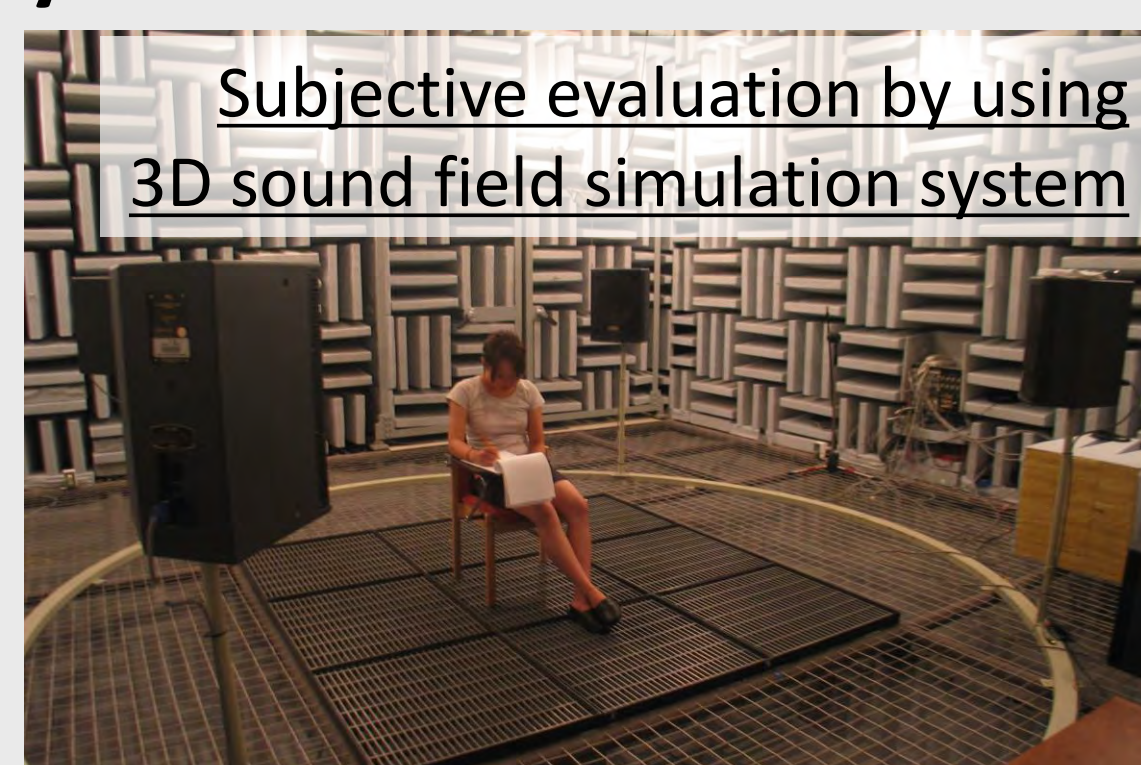
<http://www.acoust.iis.u-tokyo.ac.jp>

Measurement and Evaluation of Sound Environment in Urban City

Our laboratory treats various acoustical issues about measurement and evaluation of sound environment in urban city. Evaluation methods of acoustical environment and techniques of control and prediction of sound will be introduced.

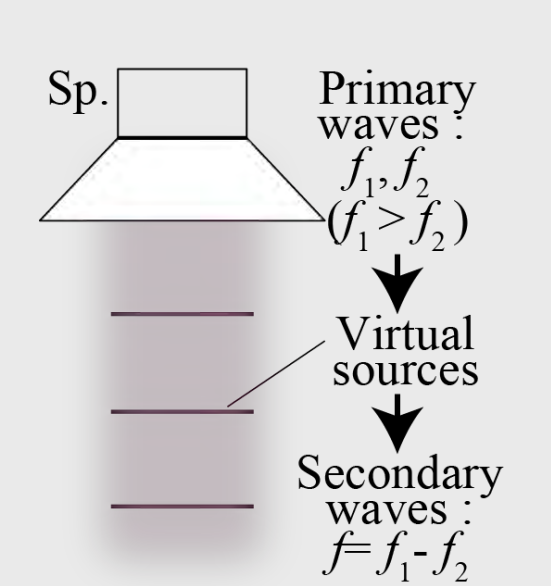
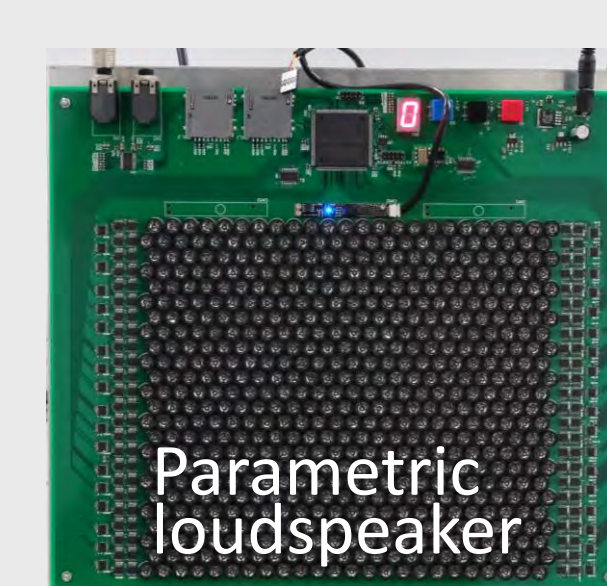
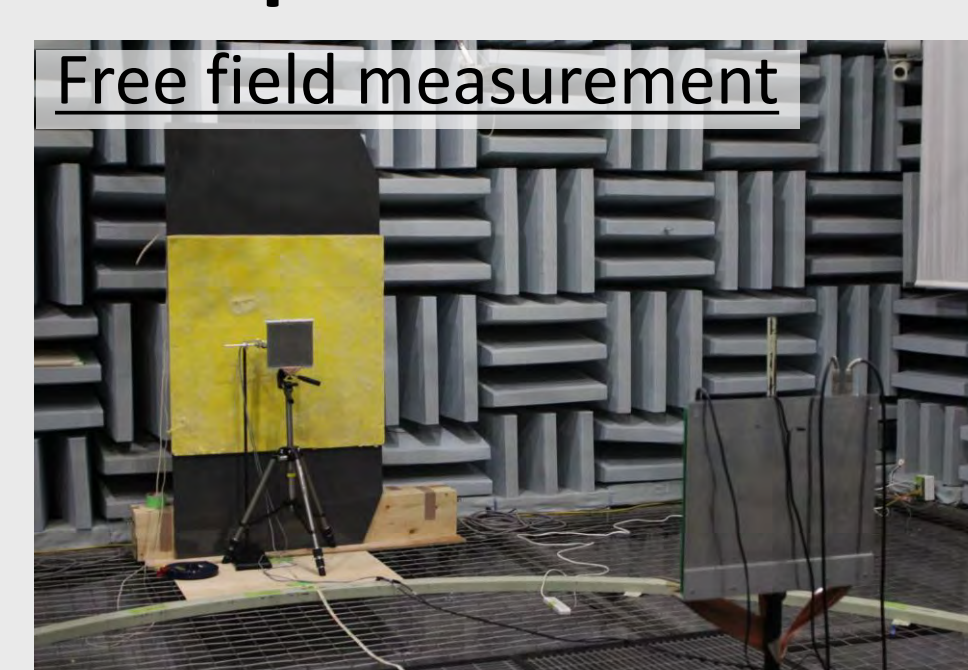
- ◆ **Development of prediction methods** : Numerical analysis
- ◆ **Room acoustic design** : Auditorium, Music practice room, Open-type classrooms
- ◆ **Acoustic measurement** : Sound propagation, Sound insulation and absorption
- ◆ **Development of sound field simulation** : 6 channel recording-reproduction system
- ◆ **Subjective evaluation** : Concert halls, Living environments, Public spaces, Offices, Healthcare facilities, other small spaces such as a car cabin

Sound environment of railway station



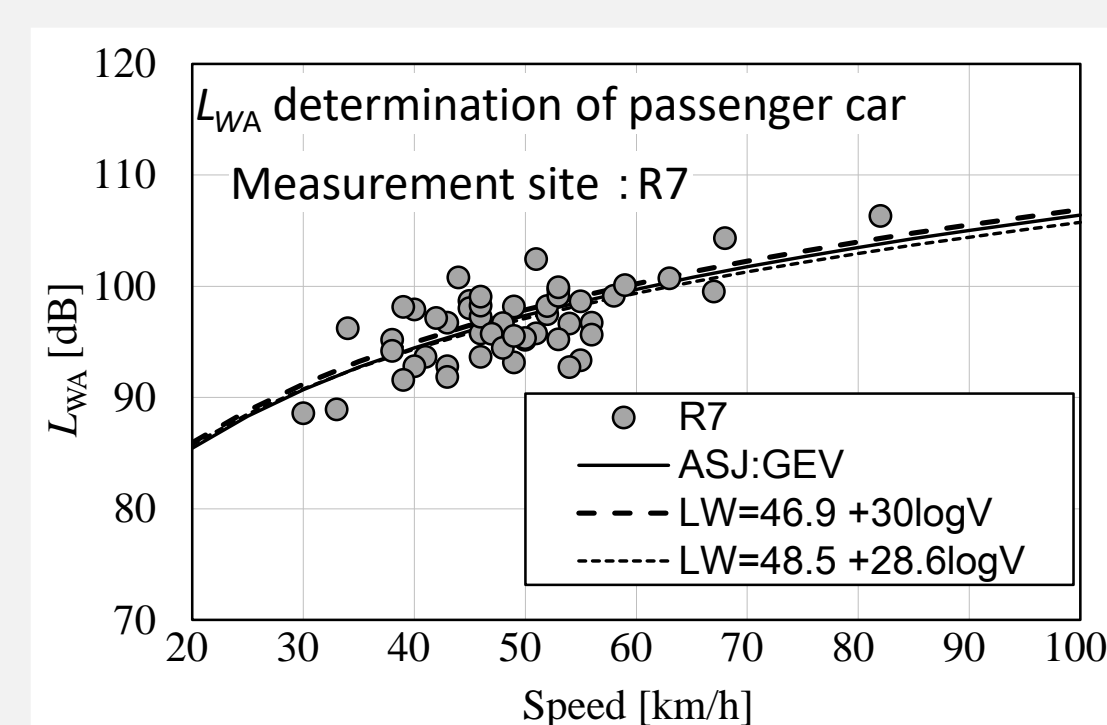
In a railway station, an appropriate announcement is very important for users' convenience and safety. A field survey and a subjective experiment were conducted. By using a 3D sound field simulation system, listening difficulty and loudness of the announcement were evaluated.

Measurement of acoustic properties by using a parametric loudspeaker

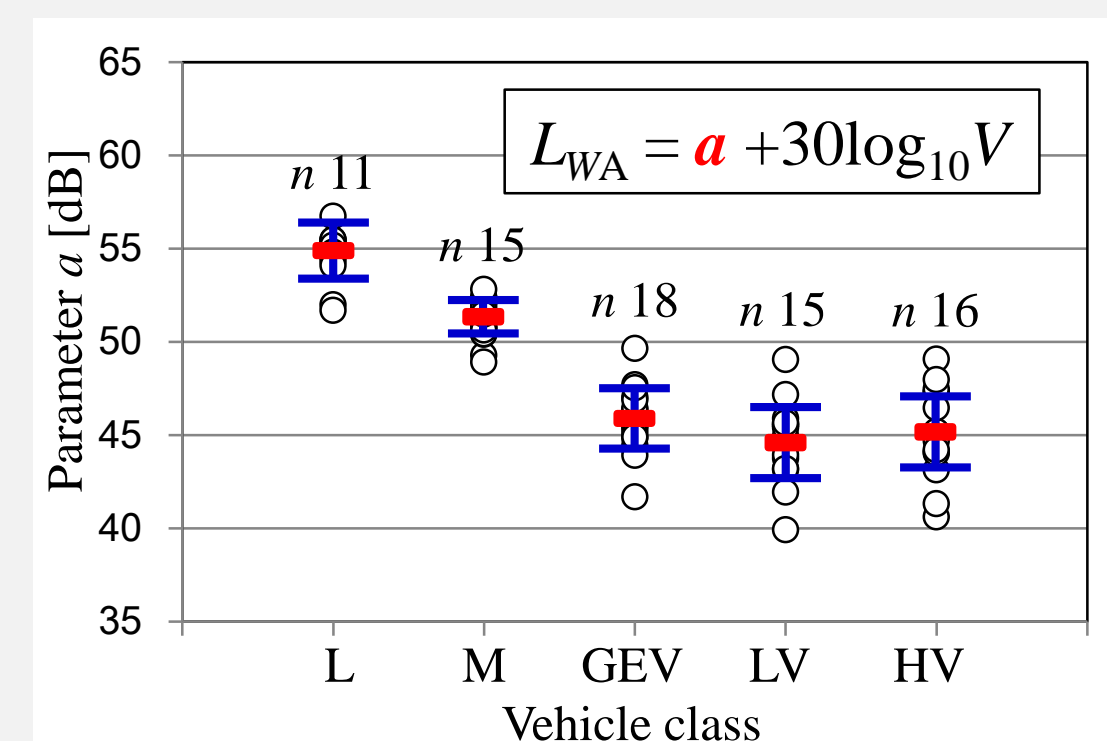


A parametric loudspeaker, which has super sharp directivity, is expected to enable in-situ measurement of acoustic properties of materials without extraneous diffraction from sample edge or obstructive reflections from room boundaries. Basic examination on the measurement method is being studied experimentally.

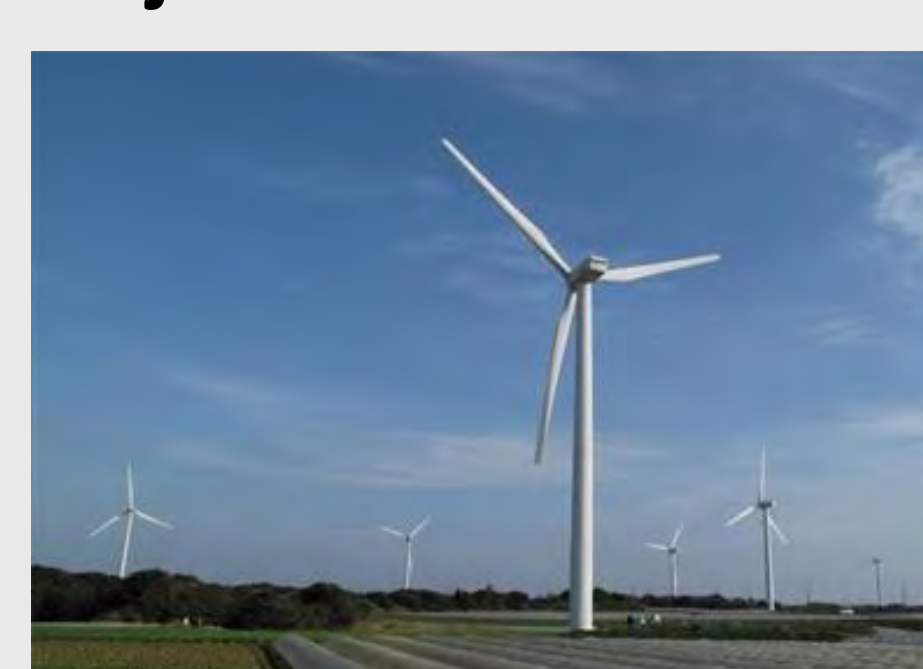
Development of prediction method of road traffic noise



Road traffic noise is one of the most important issues for environmental assessment and accurate prediction method is essential for appropriate maintenance of living environment. Such a prediction method has been developed from viewpoints of sound emission and propagation.



Subjective evaluation of noise with tonal components



Tonal components in environmental noise may increase the annoyance to the noise. Auditory experiments are conducted to know how the frequency characteristics affect the subjective perception such as loudness and annoyance.

