Quantifying microphone array directivity with outdoor measurements

Chair: Aircraft Noise and Climate Effects (ANCE) Prof. Dr. D.G. Simons (d.g.simons@tudelft.nl) Supervisor Dr.ir. Mirjam Snellen (m.snellen@tudelft.nl)

Project Overview

Microphone arrays and beamforming algorithms are powerful tools for identifying all the noise sources on an aircraft. The ANCE section has developed several microphone arrays which are used, for example, in fly-over measurements, wind turbine noise and wind tunnel experiments. One characteristic of microphone arrays is their capability to estimate the levels of sound sources that are not directly above the array. These estimates can be affected by the array geometry such as its edges.

Project Goals

Within the project the following steps will be taken:

- Investigate the performance of the current arrays with regards to measuring sound sources that are not directly above the array;
- □ Improve the array directivity performance;
- Quantify and demonstrate the improved performance.

Different sound sources will be used, ranging from simple speakers to full scale aircraft fly-overs.



TUDelft





MSc Research Thesis Assignment