

# Extracting engine power

Aircraft Noise & Climate Effects (ANCE)  
Prof. Dick G. Simons

Supervisors: ir. Dick Bergmans (dick.bergmans@nlr.nl) &  
dr. Mirjam Snellen (m.snellen@tudelft.nl)

## Project Overview

While doing noise calculations in the vicinity of airports, the engine setting is considered the main driver to determine the noise exposure on the ground. In this thesis the effect of engine power on the overall measured noise level is studied to improve and understand the difference between measurements and the calculations of aircraft noise.

In principle, the engine settings can be extracted from engine harmonics in the acoustic data. Aim of this project is to develop algorithms to automatically extract the engine power from audio files.

This algorithm could ultimately be implemented in a noise monitoring systems to provide more information on what may cause the loudness of the specific event.

## Project Goals

Currently acoustic data around Schiphol are recorded using the NOMOS systems. These systems nowadays can provide the acoustic time series. Within this project

- Algorithms need to be developed to automatically extract the engine power from NOMOS audio files;
- The engine settings need to be correlated to the noise levels;
- Ultimately, suggestions need to be made to alter the noise model to calculate contours in the vicinity of airports.

Competence and interest towards signal processing is a must have for this thesis research! For example: the revolutions per minute of the engine are to be linked to the throttle setting using audio-samples only.

