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## Airfoil Self-Noise Data Set

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**Abstract:** NASA data set, obtained from a series of aerodynamic and acoustic tests of two and three-dimensional airfoil blade sections conducted in an anechoic wind tunnel.

<b>Data Set Characteristics:</b>	Multivariate	<b>Number of Instances:</b>	1503	<b>Area:</b>	Physical
<b>Attribute Characteristics:</b>	Real	<b>Number of Attributes:</b>	6	<b>Date Donated</b>	2014-03-04
<b>Associated Tasks:</b>	Regression	<b>Missing Values?</b>	N/A	<b>Number of Web Hits:</b>	144320

### Source:

Provide the names, email addresses, institutions, and other contact information of the donors and creators of the data set.

Donor:

Dr Roberto Lopez

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Intelnics

Creators:

Thomas F. Brooks, D. Stuart Pope and Michael A. Marcolini

NASA

### Data Set Information:

The NASA data set comprises different size NACA 0012 airfoils at various wind tunnel speeds and angles of attack. The span of the airfoil and the observer position were the same in all of the experiments.

### Attribute Information:

This problem has the following inputs:

1. Frequency, in Hertz.
2. Angle of attack, in degrees.
3. Chord length, in meters.
4. Free-stream velocity, in meters per second.
5. Suction side displacement thickness, in meters.

The only output is:

6. Scaled sound pressure level, in decibels.

## Relevant Papers:

T.F. Brooks, D.S. Pope, and A.M. Marcolini.  
Airfoil self-noise and prediction.  
Technical report, NASA RP-1218, July 1989.

K. Lau.  
A neural networks approach for aerofoil noise prediction.  
Master's thesis, Department of Aeronautics.  
Imperial College of Science, Technology and Medicine (London, United Kingdom), 2006.

R. Lopez.  
Neural Networks for Variational Problems in Engineering.  
PhD Thesis, Technical University of Catalonia, 2008.

## Citation Request:

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