

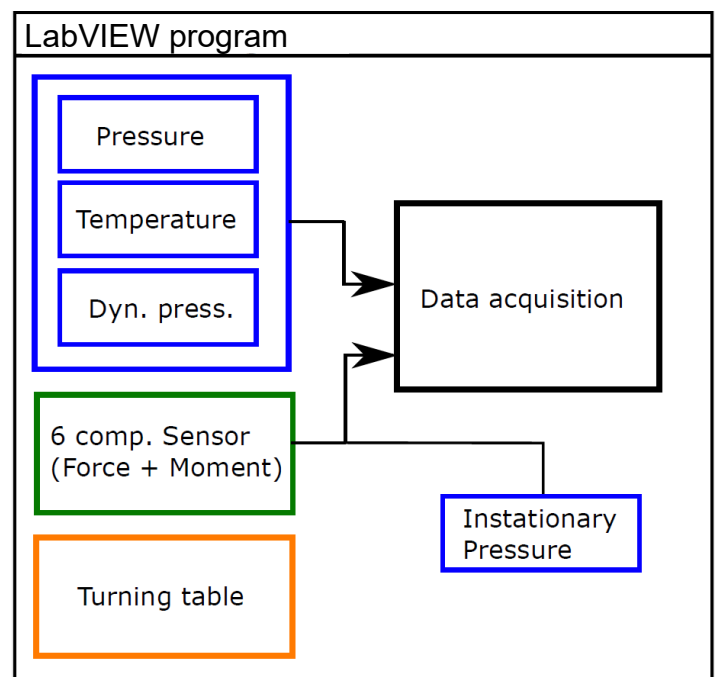
Development of a LabVIEW environment for experimental wind tunnel testing (Semester's Thesis/ Master's Thesis)

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General Information

The aim of this thesis is the development of a LabView program to control the data acquisition of aerodynamic data in the wind tunnel facility B of the Chair of Aerodynamics and Fluid Mechanics. Therefore, the pressure, temperature and dynamic pressure at the nozzle exit is recorded for a given time interval. During this interval, the transient forces and moments acting on a delta wing wind tunnel model are recorded as well. Synchronously, instationary pressure sensor data are supposed to be acquired. The LabVIEW program will control the data acquisition as well as a turntable. On the turntable the force and moment sensor is mounted, which again holds a half model of a delta wing. The delta wing is positioned in the stream of the wind tunnel.

In the end a measurement series can be performed for multiple angles of the turntable corresponding to different angles of attack of the wing.



Task of the thesis

At first literature research regarding the basic hard- and software components of the wind tunnel setup will be performed.

Afterwards LabVIEW VIs will be developed to perform the necessary tasks. Therefore, exemplary code pieces will be used as first input.

The single VIs will be tested separately first. Afterwards, the complete setup will be tested in the wind tunnel facility of the Chair of Aerodynamics and Fluid Mechanics.

Advantageous skills

It is recommended to have worked with LabVIEW before. You should have fundamental experience in programming. Enthusiasm for aerodynamics and experimental work is beneficial. Structured and independent way of working is important.

For more details please contact:

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