

Auskunft:

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B.Sc.-Arbeit (MB/WIW/ETI)

Siegen, 6. April 2022

Titel: Auswertung von Messdaten einer Offshore-Windenergieanlage

Offshore wind turbines are often founded using a monopile construction. Here the transition piece or the tower of the wind turbine is connected via a so-called grout connection to the monopile, which is driven into the seabed. The monitoring of the grout connection based on vibrational analysis is the subject of the research project "In-Situ-WIND".

As part of the project, a measurement system and a lot of different sensors (round about 100 measurement channels) have already been installed to an offshore wind turbine in the North Sea. At the moment the evaluation of the measurement data and already processed data is very uncomfortable and elaborate. Therefore, a graphical user interface (GUI) should be created, which allows a simple but at the same time comprehensive graphical presentation of data. The realization should be done with MATLAB App-Designer.

This study work includes the following steps:

1. Getting to know MATLAB App-Designer and the data structure of MSHM working group
2. Drawing up the specification of the GUI
 - 2.1. Data
 - 2.2. Functions
 - 2.3. Layout
 - 2.4. Operation
3. Development of the GUI
 - 3.1. Functionality
 - 3.2. Software ergonomics
 - 3.3. Design
4. Test with different datasets
5. Evaluation of real measurement data
6. Detailed documentation and presentation

The work can be done in German or English. Please note the special conditions of our working group MSHM and the respective examination office.



Figure 1: Offshore wind turbine at which MSHM working group successfully installed a measurement system within the research project "In-Situ-WIND"

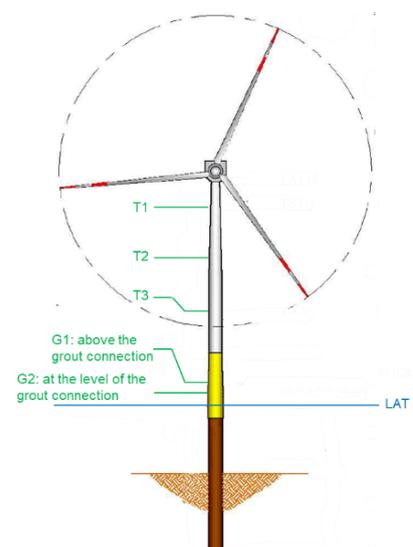


Figure 2: Levels of sensor application at the offshore wind turbine

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UNIVERSITÄT SIEGEN • Department Maschinenbau • 57068 Siegen

Studienarbeit (Mechatronics)

Siegen, 6. April 2022

Title: Development of a graphical user interface for evaluation of measurement data

Offshore wind turbines are often founded using a monopile construction. Here the transition piece or the tower of the wind turbine is connected via a so-called grout connection to the monopile, which is driven into the seabed. The monitoring of the grout connection based on vibrational analysis is the subject of the research project "In-Situ-WIND".

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4. Test with different datasets
5. Detailed documentation and presentation

The work can be done in German or English. Please note the special conditions of our working group MSHM and the respective examination office. Particularly it should be finished in five months.

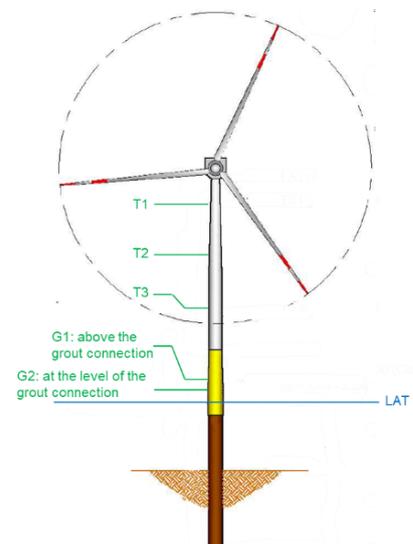


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