Experiences with methods to assess noise complaints of wind farms

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1.) Introduction

On two German wind farms − both in accordance with the legal requirements − there were strong noise complaints. To asses these complaints interdisciplinary studies at both sites were carried out. In this poster we will present the methods which were used to objectify the wind farm noise issues.

2.) Approach

The following methods were used to assess the complaints within this study:

- Psychological survey: Residents of the wind farms were interviewed by psychologists to get information about somatic / psychological stress effects and the most annoying noise characteristics. A brief overview of this method will be shown.

- Assessment of annoying time periods: To understand the noise phenomena which lead to annoyance, the most disturbing time periods had to be assessed and correlated with the operational state of the wind turbine as well as to the stress state of the residents. Therefore questionnaires and mobile sound recorder devices were used.

- Permanent sound measuring stations: Going beyond calibrated sound level measurements, noise of annoying time periods was recorded and its characteristic analysed. A permanent sound measuring station was installed additionally and used in one study. The main characteristics of this device and some meaningful results will be shown.

3.) Conclusion

A short conclusion from the results and an outlook for possible improvements of the used methods will be given.