Evaluation of sound pressure levels of infrassons and low frequency noise in Coentral Grande

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Introduction:
Concerns about environmental issues, where degradation is accentuated by the use of fossil fuels, have motivated renewed interest in renewables, especially wind power. owever, with wind energy, there is a problem with regard to the noise that these wind turbines emit and the consequent discomfort to the population, as well as the adverse effects they cause in public health.
Objectives:
To analyse and characterize the Infrassons, RBF and IRBF produced by the wind farm of Coentral-Safra and to understand its influence on the health of the population of Coentral Grande. More specifically, we intend to better understand the influence of humidity on the propagation of noise, whether there is a correlation between IRBF values in the daytime and at night, as well as inside and outside the dwellings, and finally, to understand if there is a difference in the values of infrassons and Low Frequency Noise when wind turbines are in operation and when they are stationary.
Methods:
The study was carried out in the Locality of Coentral Grande, for which a matrix was elaborated, composed of 81 sampling points so that it was comprehensive of the area of the Village. A total of 137 measurements were taken and the equipment used for data collection was the Cesva SC420 Sound Level Meter.
Results:
It is considered that the nocturnal period is more worrisome than the diurnal one. It is found that open areas have higher noise levels compared to forest areas.
Conclusions:
In summary, this study is developed based on a concern with the rapid growth of wind farm in Portugal, both in terms of quantity and size of turbines, taking into account the specific characteristics of the components of its operation and the consequent impacts. From these negative impacts comes the low frequency noise (Infrassons, RBF and IRBF), which are responsible for the DVA and STE.