To the Calculation of the Acoustic Field of Wind Turbine

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Therefore the environmental analysis of the noise which was generated by the wind turbines is needed. Actuality of problem of decline of noises does not cause any questions. In wind turbines WE-250Ñ and WE-500 made by The State Design Office "Youzhnoe" (Ukraine) basic knots are the typical emitters of infrasound. So, frequency of rotation of wind turbine makes 47,6 turns per minute. The same wind turbines WE generate in an environment infrasound with frequency of 2,4 Hz. Creation of calculation method of the acoustic field descriptions wind turbines WEU-500 is the purpose of this work. The method is based on work of L. J. Gutyn, which describes of the sound pressure calculation method, radiated powers and descriptions of orientation for a two - blades rotor. Two forces operate on every element of rotor: aerodynamic force and resistance to rotator motion. This element also affects an environment with equal on a size and the oppositely directed forces. Lays out these periodically repetitive forces in the Fourier row. Authors calculate sound pressure in the distant field of wind turbines. The results of calculations are represented as the graphs representing dependence of sound pressure in the distant field of wind turbines at powers of options 100-500 kWt, at speed of wind 3 - 10 m/s. Calculations are conducted in a software environment MathCAD.