

VibroMatrix in action

Solving vibration problems successfully



Episode 9: Storm resistance for 200 tons in a height of 135 meters

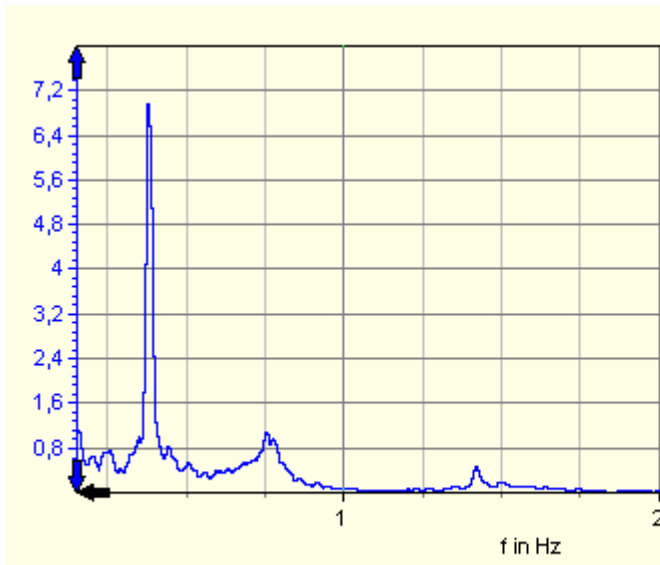
Wind energy faces big expectations when it comes to carbon-dioxide-free energy generation. Established on land since many years, the white giants now conquer the sea.



Offshore, wind power plants are exposed to even more mechanical stress. By means of VibroMatrix, the vibrational behavior can be measured detailed.

The task is challenging for the measurement equipment because of the required frequency range: The building is excited at very low frequencies lower than 1 Hz by blasts, unbalances and passing blades. Gears and rotating machines also generate vibrations in the higher frequency range.

Both tasks can be solved by VibroMatrix and a suitable accelerometer. Because of the low vibration frequencies of the tower, the occurring accelerations are low as well and, with many sensors, already disappear in the noise. But it does not happen when using the seismic accelerometers KS48C and KB12VB, which were applied for this measurement.



Eigenfrequencies of buildings can often be found below 1 Hz. No problem for VibroMatrix. The system reaches far below 1 Hz and accomplishes a resolution better than 0.01 Hz.

Thus, the eigenfrequency of the tower is displayed quickly. VibroMatrix even masters this low frequency range when analyzing vibration displacement (left picture). This is achieved by means of the high internal precision of VibroMatrix' digital signal processing.



At the same measuring point, machine vibrations can be visualized. VibroMatrix and KS48C score with their frequency of above 1000 Hz.

Precise building and machine vibration measurement – with VibroMatrix