

Seismic signal is affected by noise of non-geological origin. The main source of seismic noise is in human activities. Seismic noise of human origin occurs in the frequency range from one to the first tens of Hz. The noise intensity limits the lower level of the earthquake size that can be recorded by a seismic network. The aim of this thesis is to analyze the seismic noise on selected stations of the West Bohemian seismic network WEBNET which operates in the area since the early nineties. The earthquakes in West Bohemia/Vogtland are manifested in the form of long-lasting earthquake swarms with the magnitudes ranging up to $ML = 3.8$. The way how the seismic noise influences the seismic stations and their capability of recording small earthquakes can be classified by a statistical and time-frequency analysis. We applied this method to the selected stations NKC, KRC and SKC. The results show that the effect of noise does not deteriorate the sensitivity of the three stations for recording small earthquakes. Despite of quite good results, some differences occur among the three stations, which are most probably caused by the distance of the stations to the populated areas. The smallest noise influence is observed at the stations located far from settlement (NKC and KRC) compared to the station located in a small town (SKC).