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## Waveform quality checks at German networks

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Recently a set of quality control procedures have been implemented at the data center of the BGR (Seismic Survey of Germany). Goal is to identify unusual deviations in amplitude, timing and waveform caused by data and metadata errors. One of the strategies applied is to evaluate long term observations of seismic noise at specific frequencies at many stations. Particularly at lower frequencies this analysis is quite sensitive to amplitude changes. Also useful is the characterization of station sites by looking at anthropogenic noise patterns in a frequency range of 4-14 Hz. The sites show fundamental differences when looking at daily and weekly noise patterns and some also have specific responses to local wind. Changes in the noise patterns indicate changes in the environment or uncompensated hardware or metadata changes. Furthermore, correlations of teleseismic signals reveal possible inconsistencies in waveform shape, travel time residuals and amplitudes within the station set. When applied systematically a statistical analysis of the correlation parameters indicates long term deviations in these three observables. Finally, a formal check of the transfer function given in the metadata is implemented to identify wrong settings in the normalization and illegal specifications in the poles and zeros (conjugate complex pairs and negative real part at poles). These implemented measures help us to keep our data at a high quality level and to react quickly on the occurrence of hardware and metadata errors.