



## **Comparing Noise Level of CMG-40T and CMG-3ESPC with STS2 Seismometer at Conrad Observatory - Preliminary Results**

I. Tasic, **M. Mali**, L. Pancur

Environmental Agency of the Republic of Slovenia

In the year 2000 the project "Modernization of the Slovenian National Seismic Network" has started and was finished in the year 2007. Seismic stations are equipped with Quanterra Q730 data loggers and Guralp CMG-40T seismometers. Recently some of the Guralp CMG-40T seismometers were replaced with broadband seismometer Guralp CMG-3ESPC with frequency response flat from 50Hz to 0.083Hz (120sek). The main parameters of seismometer are generic (handed out by producer) and can deviate from real ones. For this reason, comparing the Guralp CMG 40T and Guralp CMG3-ESPC seismometer with STS2 seismometer, which is known as one of the best seismometers on the market, at low noise location, can give us a realistic presentation about quality of tested seismometer. The main goal was to find out if the frequency band, in which self noise of the seismometer is lower than the noise presented by the New Low Noise Model (NLNM), correspond with the one handed out by producer. For such kind of testing a low noise location is needed. The closest one and also one of the best laboratories for testing of seismometers is The Conrad Observatory. The observatory is situated about 50 km SW of Vienna, within a nature reserve at the outskirts of the Eastern Alps. The remoteness of the location and the undisturbed surrounding of the underground observatory allow this type of testing (site is characterized by extreme low background noise). Part of the observatory is a 150 m long tunnel with several piers for seismometers. GPS-timing system guarantees correct timing. An almost constant temperature in the tunnel contributes to the high quality of measurements. Tested seismometers (CMG - 40T and CMG3-ESPC) were installed in a tunnel next to a STS2 seismometer, which was provided from Conrad

Laboratory. Seismometers were installed on the glass plate, which is connected to a pier with a fine sand layer. Seismometers were also well temperature isolated. In this presentation preliminary results of comparing seismometers CMG 40T and CMG3-ESPC with STS2 are presented. We also compared the factory specification of the seismometer self noise, with the data acquired from testing procedure and found out some differences.