



Environmental effects on gravity at Conrad Observatory, Austria

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Since November 2007 the superconducting gravimeter (SG) GWR-C025 has been operating at the new Conrad Observatory located in a mountainous area (Northern Calcareous Alps) about 60 km Southwest of Vienna (Austria). The paper reports on the presently available geodynamical and environmental instrumentation. First results of the two years' time series are presented and compared to those obtained in Vienna, where the SG has acquired gravity data over a period of 12 years.

The investigation of environmental effects on gravity is focussed on two phenomena:

1. Long-term gravity residuals are dominated by local hydrological effects associated with water mass transport from topography (predominantly above the SG) down into the ground and with water mass storage below the SG level. Three events could be identified so far associated with periods of heavy rain or snow melt.
2. Short-term (period < 5 min) air pressure variations are frequently observed in that area in case of specific weather conditions. This permits studying the sign-reversal of the pressure admittance to gravity and the gravity response on high frequency air pressure variations.