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AG/SG gravity monitoring at Conrad Observatory (Austria)

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The Superconducting Gravimeter GWR C025 (SG) has been operating at Conrad observatory (Austria) since autumn 2007. The instrument is calibrated regularly by absolute gravimeters (AG) observing common gravity signals site by site. Since 2010, we use the absolute gravity meter FG5-242 for this purpose as well as for supporting the SG drift determination. The measurements were affected from abnormal helium concentration in the gravity laboratory of the observatory originating from small but permanent liquid helium loss of the superconducting gravimeter. Since 2011 the pulse frequency of the oscillator and its drift rate are regularly checked at the BEV metrology department revealing the systematic bias due to the He gas contamination. The latter has been controlled by several gas concentration observations in the lab and the Conrad observatory. Protecting the Rb oscillator of the AG against the abnormal helium environment allowed for observing hydrological signals (snowmelt) by both sensors during some of the calibration experiments.