Experiment with the Bonn Scintrex CG-5

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Scintrex Company Ltd has built a very precise and sensitive relative gravimeter AutoGrav CG-5 which is commonly used for mineral, oil and gas geotechnical explorations with an accuracy of 5 Micro-Gal. All of these applications are based on a glass-quartz spring, which are very sensitive to temperature changes, tilt and shake. Therefore, it is very essential to keep spring in a stable environment and avoiding of tilt and shake.

In this investigation, the behavior of the CG-5 in Bonn and Bad-Homburg will be discussed. In addition, the tilt behavior of glass-quartz spring of the CG-5 in cooperation with other Institutes is tested. The main goal of tilt experiment is to establish a relationship between duration of the tilt and offsets as function of time. The results show that CG5 gravimeter needs some hours to stabilize the glass quartz spring.

Keywords: High precision relative gravimetry, tilt experiment, CG-5 spring behavior.