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Improvements in the Signal-to-Noise Ratio of Superconducting Gravimeter Observations by Improved Atmospheric Reductions

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The high accuracy of Superconducting Gravimeters provides important advance in the knowledge of the solid Earth.
Appropriate atmospheric and hydrological reductions are a prerequisite e.g.for the discovering of core signals such as Slichter triplett and core modes.
In order to obtain a further improvement of the signal-to-noise ratio of the gravimeter data in the spectral range between 2 h and 48 h, 10 min air pressure and temperature data of 96 German meteorological stations were included in the atmospheric reduction based on the Merriam approach (Merriam, 1992).
The results are compared in their performance to the application of a local air pressure regression.