



Absolute gravity network in South America - Comparisons

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The establishment of the fundamental gravity network with A-10/032 absolute gravimeter in South America is being undertaken under the coordination of the EPUSP / LTG (Escola Politécnica da USP / Laboratório de Topografia e Geodesia) and CENEGEO (Centro de Estudos de Geodesia), with the support of the IGC (Instituto Geográfico e Cartográfico do Estado de São Paulo) and countless institutions in different countries. In Brazil, measurements were taken in the State of São Paulo, along a profile extended from Manaus (Amazonas) to Sant'Ana do Livramento (Rio Grande do Sul) and a network is under establishment in Minas Gerais . Out of Brazil, measurements have been carried out in Argentina, Venezuela and Ecuador. In the future, it is intended to extend the efforts with new stations in Brazil and a network in Colombia, Costa Rica and Paraguay. The A-10/032 absolute gravimeter is manufactured by the Micro-g LaCoste, purchased by IGC and is intended for absolute measurements of gravity acceleration. The instrument has a nominal accuracy of $\pm 10 \mu\text{Gal}$. The results are usually above the nominal value due to the noise conditions in the station and other factors. It works through the free fall of a prism, inserted in a vacuum chamber. Laser interferometry allows the determination of the time of the fall with high accuracy. A rubidium atomic oscillator is part of the equipment. In different countries there are measurements with Jilag-3, Jilag-4 and BGI A-10, out of repeated measurements with A-10/032. A profitable comparison has been undertaken and is shown in this presentation.