Some Efforts Toward the Improvement the Geodetic Network in South America

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ABSTRACT

Due to the extension of the Brazilian territory, the north and central part not always have enough fundamental gravity stations for densification networks. This is the reason why institutions such as EPUSP-PTR - (Escola Politécnica da USP), IBGE - (Instituto Brasileiro de Geografia e Estatística), supported recently by the faculty of Civil Engineering of UNICAMP - (University of Campinas) have been carried out new gravimetric measurements in the central and north parts of Brazil through different projects. In the states of Mato Grosso and Mato Grosso do Sul, a total of 85 (eighty five) base stations have been established in the years 1991/1992. In February 1996, 10 (ten) new base gravity stations have been established along Rio Negro in the Amazonas area, from São Gabriel da Cachoeira to Manaus. These stations will support densification network along the Rio Negro river and the tributaries to be carried out in the second semester of 1997. These activities are supported by the University of Leeds (GETECH).

An extra effort has also been addressed with the cooperation of SAGECAN - (Servicio Autonomo de Geografia y Cartografia Nacional) in Venezuela and of Bureau Gravimétrique International (BGI) in French Guyana. In the Venezuela border a complete network has been done which included geometric levelling, GPS observations and gravity ties. The objective was to integrate the networks of the two countries. On the other a gravity tie has been carried out with French Guyana, Caienne, connecting the Fundamental Gravity Station in Belém.

This paper intends to describe the general procedures in these networks and some of the results obtained.