

Gravity surveys are operations that occur, in most cases, in outdoor environments, using relative or optical-mechanical gravimeters. In Geophysics, the determination of gravity has the role of assisting in mineral prospecting and in modeling the Earth's structure. In Geodesy, gravity observations can be evidenced in the computation of gravimetric geoid models and in obtaining physical heights. Whatever the activity listed, a large number of gravimetric measurements, carried out with electronic or optical-mechanical gravimeters, are necessary. When using an electronic gravimeter, most information is recorded on the equipment.

In the case of optical-mechanical gravimeters, all information must be handwritten (Fig. 1) and, subsequently, registered in a virtual environment in order to allow the resulting processing.



Fig. 1: Recording of information with optical-mechanical gravimeter.

This transcription process is time-consuming, can result in gross errors, and entails the need to archive field notebooks.

Furthermore, late processing makes it difficult to detect some problems that would be easily correctable when collecting the information.

The objective of this work is to present a mobile application (Fig. 2) for recording "in loco" the gravimetric information collected in the field with optical-mechanical gravimeters, whose details are presented.



Fig. 2: gravsurvey mobile app home and entry screens

The app was developed in Flutter, an open-source UI (User Interface) development kit, created by Google, which makes it possible to build natively compiled apps.

Basically, it allows the recording of instrumental readings, approximate coordinates, attributes and other elements of the gravimetric stations and lines, photo insertion and other appropriate additional observations, in addition to facilitating

operator guidance with real-time navigation.

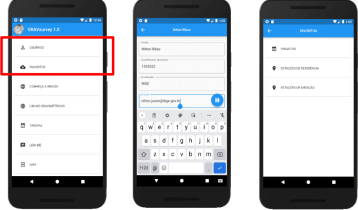


Fig. 3: registration of users and favorites

User registration, as well as the favorite database, is important not only in the repetitive filling of data, but mainly in the elimination of gross typing errors (Fig. 3).

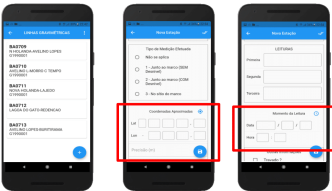


Fig. 4: gravimetric line registration

The registration of a gravimetric line and its stations is done in an easy and intuitive way,

searching for data in the favorites database, when necessary, in addition to automatic collection tools, such as coordinates, date and time (Fig. 4). The usability of Google Maps makes possible to know the surroundings of the survey area, as well as the navigation to the place of interest in an easy and direct way (Fig. 5).

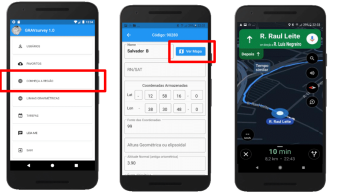


Fig. 5: the usability of Google Maps

The tool also allows the generation of reports of gravimetric lines in PDF (Fig. 6), as well as the transfer of information to a computer, with a view to further processing of the data. **The application is expected to be made available to the entire SIRGAS community.**

Fig. 6: gravimetric line report