

Geodesy in Croatia, 1999-2002

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This report presents the research activities in the field of geodesy in Croatia in the period from 1999 to the end of 2002. We enumerate the research projects funded by Croatian Ministry of Science and Technology. Next, we survey the papers published in Croatian national periodical »Geodetski list«, the papers published on scientific conferences organized in Croatia and the papers published by Croatian geodesists in international journals and conference proceedings during last four years. Finally, a list of selected references is included.

The scientific research was performed exclusively by the experts from the Faculty of Geodesy, University of Zagreb, through the programmes supported by the Ministry of Science and Technology. During this period, former projects (described in previous report) were finished and new projects were accepted after careful review. These projects are the continuation of previous programmes: »Geodetic-geodynamic GPS-projects in the Republic of Croatia« continues on »Physical and Satellite Geodesy in the Republic of Croatia«, »Compatibility of Heights in Croatia« continues »Height Systems in the Republic of Croatia«, »Automated Geodetic Measurement Methods« continues »Measurement Methods in Geodesy and their Automatization«. The new project is »Geomatica Croatica« which stresses the link between various fields of satellite techniques with classical measurements and the importance of physical geodesy. Two other projects related to cadastre and cartography are more related with FIG and ICA, respectively.

Several projects which are going to determine the future of geodesy in Croatia were conducted in cooperation with German Federal Agency for Cartography and Geodesy (BKG): permanent GPS-stations and absolute gravimetric measurements. Two permanent GPS-stations were established in Dubrovnik and Osijek within the frame of the International GPS-Service for Geodynamics (IGS), (Medak and Pribičević, 2001b). With the help of absolute gravimeters from Germany and France as a part of UNIGRACE project, Croatia has established a unified absolute gravity network which is going to be a high quality base network for future gravimetric works (Richter et al. 1999; Čolić et al. 2001).

Significant research has been performed within the project CERGOP (Central European Regional Geodynamic Project), a part of Geodetic and Geodynamic Programmes of the CEI (Central European Initiative). Contribution related to this project are Altiner et al. (2001), Medak and Pribičević

(2001a) and Pribičević et al. (2001a). The new phase of the project started by the end of 2002 through signing the new contract with European Commission within the Fifth Framework of Scientific Programmes. This is very important step for Croatian geodesy, since it was the first time that Croatia was accepted directly in such a project within the field of geodesy.

As usual most of the activities were conducted within the Section I: Positioning. After the establishment of the zero-order 3D Network in 1994 and CROREF Network in 1996, Croatia continued the efforts on densifying the network of GPS-points. In the area of Croatian Capitol, Zagreb, the base GPS-network was re-measured in 2001 in order to obtain quantitative parameters of the motion of the points through time (Medak and Pribičević, 2001c). Interdisciplinary cooperation has been planned with the aim to interpret resulting movements.

After successful publishing of the proceedings of the 2nd International Symposium »Geodynamics of the Alps-Adria Area by means of Terrestrial and Satellite Methods«, held in Dubrovnik, October 1998, under the patronage of IAG another important scientific event took place in Dubrovnik in May 2000: International Workshop on Perspectives of Geodesy in South-East Europe. Proceedings (Moritz et al. 2001) were published in Graz with several papers by Croatian geodesists: Čolić et al. (2001), Car and Medak (2001). The last paper stressed the strong link between classical geodesy and modern trends in geoinformation science. This link was present in several other papers starting with the Ph.D. thesis by Medak (1999a), then by Medak (1999a), Frank and Medak (1999), Medak (2000). Another important multidisciplinary link between several geosciences was stressed in the Ph.D. thesis by Pribičević (2000a).

Croatia participated in events related to the IAG Subcommittee for Europe – EUREF, (Bašić and Bačić, 2001; Rožić, 2002a). The foundation of Croatian Geodetic Institute was reported in Rožić (2002b).

Croatian State Geodetic Administration hosted the EUREF-meeting in Dubrovnik in 2001. A number of reports have been submitted to various European organizations: Bačić and Zekušić (2000), Bačić (2001), Bačić et al. (2001), Marjanović and Bačić (2001). Second Croatian Congress on Cadastre, a large national meeting of geodesists was held in Zagreb in November 2001.

Significant progress was made in the area of geoid investigation in Croatia (Bašić and Brkić, 1999; Bašić et al., 1999; Brkić and Bašić, 2000; Brkić and Bašić, 2001; Pribičević and Medak, 2001; Pribičević et al. 2001). Status of height system and leveling was described in Rožić (1999, 2000) and Rožić et al. (2000).

Solarić, N. and M. Solarić (2001) analyzed the result of many years of various geodetic observation techniques applied at Hvar Observatory. That paper serves as a brief history of modern positioning methods in Croatia.

The role of geodesy in ecological engineering was presented in Medak and Pribičević (2002), while an interesting visualization of geodesic was presented in an international Internet conference (Medak et al. 2002).

Finally, Faculty of Geodesy at University of Zagreb celebrated 40 years of independent existence with a large meeting, which resulted with more than 30 papers published in proceedings (Bašić, 2002).

List of publications

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