

First name and Family name:	<b>Gligorije Perović</b>	Photo
Date, place and country of birth	09. 11. 1940., Zekavice, Pljevlja, Montenegro	
Education :		

1. Bachelor: Department of Geodesy, Faculty of Civil Engineering, Belgrade University in 1967
2. Master of Science: Faculty of Civil Engineering, Belgrade University; Msc thesis: *Random and Systematic Errors in Trigonometric Levelling* (in Serbian), on 5. 7. 1978
3. PhD: Faculty of Civil Engineering, Belgrade University; Title: *Errors of Point Positions*, on 1. 7. 1980



CV data :

**Date and place of birth:** 9. 11. 1940., Zekavice village, Pljevlja, Montenegro.

**Education:**

- Primary school in 1956, Odžak, Pljevlja, Montenegro;
- Technical professional school – geodetic branch, Titograd, in June 1961;
- Department of Geodesy, Faculty of Civil Engineering, Belgrade University, in 1967;

**Position degrees:**

At the Faculty of Civil Engineering – Department of Geodesy, Belgrade University became: *assistant, assistant - professor, associate professor and full professor.*

Languages: Russian and English.

**Employment:**

- From 1. 6. 1961 to 19. 10. 1961 - surveyor in the Geodetic Authority of the People's Republic of Montenegro;
- From 6. 3. 1964 to 30. 9. 1964 - engineer in Geodetic Authority of APKM;
- From September 1967 to September 1968 - military service in JNA;
- From 1. 10. 1968 to 30. 11. 1969 - assistant of Geodesy at the Technical Faculty in Priština;
- From 1. 12. 1969. to 31. 08. 1971. - assistant of Geodesy 2 at the High Geodetic School of Professional Studies in Belgrade;
- From 1. 9. 1971 till retirement 1. 10. 2006 - at the Faculty of Civil Engineering, Belgrade University;
- Has been professor at many universities and academies in SFRJ.

## CV

### Monographs

- Singular Adjustment Theory (in Serbian: Singularana izravnjanja) (VI + 216 str.), Naučna njiga, Beograd, 1986.
- Least Squares, Faculty of Civil Engineering and author, Belgrade 2005.
- Precise geodetic measurements (In Serbian: Precizna geodetska merenja), Faculty of Civil Engineering and author, Belgrade 2007.
- Theory of measurement errors (In Serbian: Teorija grešaka merenja). AGM knjiga, Beograd, 2015.
- Precise geodetic measurements – second enlarged and revised edition (In Serbian: Precizna geodetska merenja – drugo dopunjeno izdanje). AGM knjiga, Beograd 2017.
- The Models and Decision Analysis (In Serbian: Analiza modela i odluka). AGM knjiga, 2017.

### Textbooks, teaching texts

- Handbook for Practical Teaching of Geodesy II (In Serbian: Priručnik za praktičnu nastavu iz Geodezije II), (144 str.) , Faculty of Civil Engineering, Beograd, 1979.
- Adjustment theory first book – Theory of measurement errors (In Serbian: Račun izravnjanja knjiga I - Teorija grešaka merenja), (VIII + 336 pp.), Naučna knjiga, Belgrade, 1984.
- Adjustment theory first book – Theory of measurement errors (VIII + 423 pp.) second, enlarged and revised edition, (In Serbian: Račun izravnjanja, knjiga I - Teorija grešaka merenja), (VIII + 423 str.), Naučna knjiga, Beograd, 1989.

### Scientific papers

- A method for detecting positions of trigonometric points (in Serbian: Jedna metoda otkrivanja položaja trigonometrijskih tačaka). Geodetska služba, 1973.
- Weights of heterogeneous measurements (in Serbian: Težine raznorodnih merenja). Zbornik Geodetskog instituta, Građevinski fakultet, Beograd, 1973.
- Detecting point positions by using the factors „a“ and „b“ (in Serbian: Otkrivanje položaja tačaka pomoću faktora "a" i "b"). Geodetski list, 1975. (posebno izdanje posvećeno V kongresu SGIG-a).
- Calculation approximate coordinates applying resect one's position (in Serbian: Računanje približnih koordinata tačaka presecanjem nazad). GL Zagreb, 1975. (posebno izdanje posvećeno V kongresu SGIG-a).
- Trigonometric levelling – new formulae for accuracy estimate (in Serbian: Trigonometrijski nivelman - nove formule za ocenu tačnosti). Geodetski list, br. 1-3, str. 36-43, Zagreb, 1977.
- Estimation of random and systematic errors in trigonometric levelling from the differences of two-sided measurements (in Serbian: Određivanje slučajnih i sistematskih grešaka u trigonometrijskom nivelmanu iz razlika obostranih merenja). Zbornik Geodetskog instituta, Građevinski fakultet, Beograd, 1978
- The inversion of ill-conditioned matrices (in Russian: Obrashchenie plokho obuslovlennykh matric). Zbornik Geodetskog instituta, Građevinski fakultet, Beograd, 1980
- On RMS deviation of unit weight (in Serbian: O srednjem kvadratnom odstupanju jedinice težine). Geodetski list br. 4-6, 143-148, 1987.
- Possibility of precise geometric levelling with line-of-sight lengths of 50 m (in Serbian:Mogućnost preciznog nivelmana sa dužinama vizura od 50 metara). Geodetski list, 7-9, 1987.
- Optimisation of number of measurements in measuring a single quantity (in Serbian: Optimizacija broja merenja pri merenju jedne veličine). Geodetska služba, br. 48, 1987.
- Dependence of theodolite collimation on air temperature (in Serbian: Zavisnost kolimacije teodolita od temperature vazduha). Geodetski list 1-3, 13-18, 1988.
- On replacement of linear estimation by quadratic one (in Serbian: O zameni linearnog kvadratnim ocenjivanjem). Geodetski list 10-12, str. 329-332, 1988.
- Power of deformation analysis method for the control network in all figure combinations (in Serbian: Moć metode analize deformacija u svim kombinacijama). Geodetski list 1989., 1-3, str. 5-11.
- Modern trigonometric levelling with short sides in the standerd conditions (in Serbian: Savremeni trigonometrijski nivelman kratkih strana u standardnim uslovima). Geodetski list 1989., 4-6, str. 107-118.
- Reliability of traverse control networks (in Serbian: Pouzdanost poligonometrijskih mreža) (coauthor S. Ašanin). Geodetski list 1989., 10-12, str. 371-378.
- Variance components estimation (in Serbian: Ocjenjivanje komponenti disperzija). Geodetska služba 1993, br. 67, str. 17-33, Beograd.
- Congruence theory in determination of deformations and movements of dam points by using geodetic methods (in Serbian: Teorija podudarnosti u određivanju deformacija i pomeranja tačaka brana geodetskim metodama). Vodoprivreda, 28 (1996.) 163-164, str. 321-326.
- Mathematical model of geometric deformations of dams (in Serbian: Matematički model geometrijskih deformacija brana). Vodoprivreda, 29 (1997.) 165-166, str. 79-82.
- The precision of time registration with Danjon astrolabe (coauthor Z. Cvetković), Serb. Astron. J. №157 (1998), 1 – 6.
- Examination of the relationship between net extinction in elisa and virus neutralization methods for estimating the titer of neutralizing antibodies against bovine herpesvirus (coauthors: S. Lazić, R. Ašanin, L. Dražić, D. Milanov and B. Vidić). Acta veterinaria, vol. 48, No2-3 (1998), pp 99-104, Fculty of Veterinary Medicine, Belgrade.
- The systematic influence of apparent magnitude of stars on longitude - difference Determination with Danjon astrolabe (coauthor Z. Cvetković). Publ. Astr. Obs., Belgrade, No 65 (1999), 131-134.
- Estimating the variance coordinate measuring for binary orbit (coauthor Z. Cvetković). DE GRUYTER OPEN. J. Geod. Sci. 2015; 5:103-114.
- Variance Components Analysis in GPS Measurements. Imperial Journal of Interdisciplinary Research (IJIR), Vol-2, Issue-5, 2016; ISSN: 2454-1362, <http://www.onlinejournal.in>.

- Optimization of the 2D Control Geodetic Network of the Landslide (coauthors D. Sekulović, D. Skorup), in Application of Geographic Information System in Modeling of Natural Catastrophe, Monograph, D. Sekulović Ed. Faculty of Information Technology and Engineering, University „Union-Nikola Tesla“ Belgrade, Serbia, (2019).
- Robust Estimation of the Normal – Distribution Parameters by Use of Structural Partitioning - PEROBLS D METHOD, Vol.9 No.4, Dec 2019.

<b>Scientific meetings and conferences</b>	<ul style="list-style-type: none"> <li>• Determination of number of digit positions for the coefficients of correction equations depending on errors of unknown quantities (in Russian: Opredelenie chisla desyatichnykh mest koefficentov uravnenij popravok v zavisimosti ot oshibok iskomykh velichin). Mezhdunarodnaya konferentsiya po vichislitel'noj tekhnike v Geodezii. Sofiya, 7-11 okt. 1971. Zbornik dokladov, TOM III-B, str. 91-99</li> <li>• The accuracy of object height determining by using trigonometric levelling method (in Serbian: Tačnost određivanja visina objekata metodom trigonometrijskog nivelmana). Naučno-tehničko savetovanje u inženjerskoj geodeziji, SGIGJ, Mostar, 1974</li> <li>• Some Estimable Functions in Geodetic Networks. Survey Control Networks, Meeting of Study Group 5B, 7-9 June 1982., Aalborg, Denmark</li> <li>• A Generalization of One Way Classification. 16-th European Meeting of Statistics, Marburg, 3-7 Sept. 1984</li> <li>• Testable hypotheses in deformation analysis (in Serbian: Testive hipoteze u deformacionoj analizi. Savetovanje o hidrologiji i hidrogradnjici). Split, 8-9 nov. 1985. Zbornik radova, str. 289-293</li> <li>• Neglectivity of Systematic Errors. VI-th International Meeting of A.E.A., 16-17 Dec. 1985., Rotterdam. Proceedings, pp. 158-161.</li> <li>• Analysis of systematic influences of a single factor on the measurement result (in Serbian: Analiza sistematskih uticaja jednog faktora na rezultat merenja). 6-ti jugoslovenski simpozijum o rudarskim merenjima. Žabljak, 21-24 maj 1986.</li> <li>• Measurement range as an accuracy measure (in Serbian: Raspon merenja kao mera tačnosti). 6-ti jugoslovenski simpozijum o rudarskim merenjima. Žabljak, 21-24 maj 1986.</li> <li>• Estimation of systematic errors in pairs of measurements (in Serbian: Ocjenjivanje sistematskih grešaka u parovima merenja). XII JUKEM-86, Beograd, 29-31 oktobar 1986.god.</li> <li>• Defining the scale and its influence on the precision and reliability of networks (in Serbian: Definisanje razmernih i njen uticaj na preciznost i pouzdanost mreža) (coauthor S. Ašanin). Savetovanje: Osnovni geodetski radovi i oprema za njihovo izvođenje. Struga, 12-13 juni 1987, str. 225-240.</li> <li>• Simultaneous adjustment effects for trigonometric networks of I and II orders (in Serbian: Efekti zajedničkog izravnjanja trigonometrijske mreže I i II reda) (coauthor S. Ašanin). Savetovanje: Osnovni geodetski radovi i oprema za njihovo korišćenje. Struga 12-13 juni 1987, str. 195-197.</li> <li>• Control network optimisation for the case of radial movements (in Serbian: Optimizacija kontrolnih mreža za slučaj radikalnih pomeranja) (coauthor S. Ašanin). Savetovanje Inženjerska geodezija, Zbornik radova str. 115-119, Priština, 13-14 maj, 1988.</li> <li>• Gyro-theodolites and their role in tunnel boring (in Serbian: Žiroteodoliti i njihova uloga u proboru tunela) (coauthors: S. Ašanin and V. Milovanović). Zbornik radova Savetovanja Inženjerska geodezija, Priština 13-14 maj, 1988. Zbornik radova str. 75-79.</li> <li>• A generalisation of pairs of measurements, (contributed paper). International Workshop on Theory and Practice in Data Analysis, August 19-21, 1988, Berlin, GDR.</li> <li>• Robust estimation of standard deviation for a normal distribution from measurement range (in Serbian: Robusno ocenjivanje standardnog odstupanja normalnog rasporeda iz raspona merenja). Zbornik radova savetovanja Kvalitet statističkih podataka, str. 359-368. Arandelovac, 6-7 dec. 1989.</li> <li>• Robust ML Estimation of Variance Normal Distribution from Distribution of Empirical Variances (contributed paper). 2nd World Congress of the Bernoulli Society for Math. Stat. and Probability. August 13-18, 1990. Uppsala, Sweden.</li> <li>• Accuracy ratio in etalon values transfer (in Serbian: Odnos tačnosti u prenosu etalonskih vrednosti), XIV JUKEM, 24-27 oktobar 1990., Sarajevo.</li> <li>• A modified method for robust estimation of standard deviation of a normal distribution from measurement range (in Serbian: Modifikovana metoda robusnog ocenjivanja standardnog odstupanja normalnog rasporeda iz raspona merenja). Konferencija: Unapređenje i racionalizacija tehnoloških procesa u ruderstvu, geologiji i metalurgiji, 19-21 nov. 1990, Beograd.</li> <li>• Covariance analysis from longitudinal linear deviations of main polygonometric traverses (in Serbian: Kovarijaciona analiza iz podužnih linearnih odstupanja glavnih poligonometrijskih vlakova). (coauthor Z. Gospavić). Savetovanje: Nove tehnologije u geodeziji, 7-18 juni, 1991, Neum.</li> <li>• Robust MM Estimator of Variance of Normal distribution from distribution of Empirical Variances. In: (Eds.: H.Palzer and A.Witte) Precise Vertical Positioning, Dummler Verlag, Bonn, 1991.</li> <li>• Robust ML Estimation in Tukey's Mixed Distributions of Empirical Variances (contributed paper). Ist Int. Symp. On Applications of Geodesy to Engineering, Stuttgart, May 13-17, 1991.</li> <li>• Robust Unbiased MM Estimation in Tukey's Mixed Distribution of Empirical Variances (contributed paper). 6th International FIG Symposium On Deformation Measurements, Feb. 24-28, 1992, Hanover.</li> <li>• About PERG STRATEGY for Geodetic-Network Optimisation. Workshop on Perspectives for Geodesy in South-East Europe. Dubrovnik, May 2-6, 2000.</li> </ul>
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- Optimisation of metrological guaranty for large length etalons (in Serbian: Optimizacija metrološkog obezbeđenja etalona velikih dužina). II Kongres metrologa Jugoslavije, Novi Sad, 15-17. novembar 2000.
- The MINQE-PERG Method of Variance-Components (VC) Estimation. Deseti Kongres matematičara Jugoslavije, Beograd 21-24 januar 2001.
- Robust PEROBLES 3 Method of Least Squares (LS). Deseti Kongres matematičara Jugoslavije, Beograd 21-24 januar 2001.
- Perspectives of Engineering Geodesy in III millennium (in Serbian: Perspektive inženjerske geodezije u III milenijumu). Društvo za visoke brane SCG, II KONGRES, 7-10 oktobar 2003, Kladovo.
- PERG method of Increasing the Absolute Vertical Accuracy of the Laser Scanned Points Obtained by FLI-MAP System Applied on Asphalt Roads, (coauthors: I. Nestorov, J. Beljin, M. Gligorić). INTERGEOEAST, Belgrade, 3-5 March, 2004.
- PERG Method of Increasing the Absolute Vertical Accuracy of the Laser Scanned points Obtained by FLI-MAP System Applied on Asphalt Roads. „FUGRO“, Leidschendam, Netherlands, 4. June 2004.
- 2D Transformation of the orthorectified ikonos satellite imagery (sa Z. Kričkovićem, M. Pejićem i V. Petrovićem). INTERGEOEAST, Belgrade, 23 – 24 February, 2006.
- PERGGEOREF method of georeferencing of very-high-resolution satellite images, (with: D. Andjić and M. Todorović). INTERGEOEAST - International symposium "modern technologies, education and professional practice in geodesy and related fields", 09-10 November 2006, Sofia, pp 329-334.
- PERGELTOR Method of integrating GPS measurements and trigonometric networks, (with: Z. Sušić, D. Andjić and R. Djurović). INTERGEOEAST - International symposium "modern technologies, education and professional practice in geodesy and related fields", 09-10 November 2006, Sofia, 38-44.
- PERGELTORAF Method of integrating GPS measurements and trigonometric network, (with: Z. Sušić, R. Đurović and M. Todorović). INTERGEOEAST - International symposium "modern technologies, education and professional practice in geodesy and related fields", 09-10 November 2006, Sofia, pp 45-50.
- A comparison between the NND and MINQE VC estimates, (wityh Z. Cvetković). INTERGEOEAST - International symposium "modern technologies, education and professional practice in geodesy and related fields", 09-10 November 2006, Sofia, pp 83-86.
- Investigation of maximal accuracy of civil engineering structures levelling by using laser levels (with: S. Vučkov and D. Andić). Conference for Landmanagement, Geoinformation, Building Industry, Environment "INTERGEOEAST", 1-2 March 2007, Sofia.
- The PERG method of noise dispersion estimation in relative GPS positioning. INTERGEOEAST - International symposium " Trade Fair and Conference for Landmanagement, Geoinformation, Building industry, Environment", 19-20 February 2008, Belgrade.
- ON INVERSE PROBLEMS STUDIED BY HELMUT MORITZ AND ON HIS HUMANE ACTIVITIES. Colloquium "Scientific Geodesy" – to honour Helmut Moritz on the occasion of the 75<sup>th</sup> birthday, of Prof. Dr. techn. Dr. h. c. mult. Helmut Moritz, Graz. November 14, 2008, Berlin.
- Tolerance for Objects and Geodetic Control. Tolerancije kod objekata i geodetska kontrola. Internacionalni naučno – stručni skup Graditeljstvo – Nauka i Praksa (GNP), Žabljak, 3 – 7 mart 2008.
- Possibilities of Levelling with Laser Levels in Examining Bridge Loading (with D. Andić). Mogućnosti nivelmana sa laserskim nivelirima u ispitivanju mostova na opterećenje (sa D. Andićem). Internacionalni naučno – stručni skup Graditeljstvo – Nauka i Praksa (GNP), Žabljak, 3 – 7 mart 2008.
- Principle of determining the influences of time variable errors on the baseline vectors. *The Jubilee Scientific and Technical International Conference on Geodesy, Cartography and Cadastre in the 21<sup>th</sup> Century held within framework of celebrating the 230<sup>th</sup> Anniversary of Moscow State University of Geodesy and Cartography; on May 25-27, 2009, Moscow.*
- Geodesy in Building Constructions. Geodezija u graditeljstvu. VI Naučno-stručni skup „Graditeljstvo nauka i praksa“, Banja Luka, 15-16 maj 2010.
- Possibilities of Laser Scanning of Asphalt Roads from Helicopters. Mogućnosti laserskog snimanja asfaltnih puteva iz helikoptera. VII međunarodni naučno-stručni skup „Savremena teorija i praksa u graditeljstvu“, Banja Luka, 14-15 april 2011.
- Possibilities of Trigonometric Levelling in the Scanning of Asphalt Roads. Mogućnosti trigonometrijskog nivelmana za snimanje asfaltnih puteva. Kongres metrologa Srbije, Kladovo, 17 -19 oktobar 2011.
- Pure-error and testing problem in orbit determination for a binary star (with Z. Cvetković). International Scientific Conference and XXIV Meeting of Serbian Surveyors "Professional Practice and Education in Geodesy and Related Fields". 24-26, June 2011, Kladovo - „Djerdap“ upon Danube, Serbia.
- A Method of Terrestrial Laser Scanning of a Landslide. Metoda terestričkog laserskog snimanja klizišta. Treći međunarodni naučni skup KATASTROFE – PREVENCIJA I SANIRANJE POSLJEDICA; Evropski univerzitet, Brčko distrikt, mart 27-28 2015.

**Recommendation  
of coryphaeus of  
geosciences of  
tenfold  
Academician Prof.  
Dr. Helmut Moritz,  
TU Graz, for  
obtaining title  
Emeritus Professor**

**Recommendation – original:**

**Technische Universität Graz, Erzherzog-Johann-Universität, Institut für Navigation und  
Satellitengeodäsie, Em. Univ.-Prof. Dr. h.c. mult. Dr. techn. Helmut Moritz, Steyrergasse 30, A-8010 Graz,  
E-Mail: [helmut.moritz@tugraz.at](mailto:helmut.moritz@tugraz.at)**

12. November 2009

Nastavno-naucni vece Gradevinskog fakulteta  
Bulevar Kralja Aleksandra 73/I  
Yu-11000 Beograd  
Srbija

Re: Gligorije Perovic  
Nomination as Emeritus Professor

Dear Colleagues,

With great appreciation I have heard that  
**PROFESOR GLIGORIJE PEROVIC**  
may be appointed  
**PROFESSOR EMERITUS**

I strongly support this nomination for the following reasons:

1. He is internationally known as author of outstanding scientifically progressive and practically useful books of high value and worldwide circulation, in Serbian and English.
2. He has actively participated in all kinds of national and international cooperation and has made your country and your university known throughout the world as a leader in geodesy and surveying.
3. I have had the honour for many decades to have known him personally as a loyal and honest friend and colleague.

I would be very happy if you could nominate Professor Perovic Emeritus Professor at your University.

Respectfully yours.

Helmut Moritz