

CURRICULUM VITAE

Dr. Roohollah Karimi

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Personal Data

First Name: Roohollah

Last Name: Karimi

Date of Birth: 15.10.1978

Nationality: Iranian

Marital Status: Married, with two children

Employment: Assistant Professor, Department of Geodesy and Surveying Engineering,
Tafresh University, Tafresh, Iran

Email: rkarimy@ut.ac.ir , karimi@tafreshu.ac.ir

Educations

University Educations

Jan. 2010 – Apr. 2011: Post Doc. in Geodesy, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran, Tehran, Iran. Research title: “Planetary gravity field modeling”

Jan. 2004 – Jan. 2010: Ph.D. in Geodesy with excellent honor, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran, Tehran, Iran. Thesis title: “Local gravity field modeling”

Sep. 2001 – Sep. 2003: M.Sc. in Geodesy, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran, Tehran, Iran. Thesis title: “Processing of the observations of precise leveling network of Iran and computations of geopotential numbers for the whole network”

Sep. 1997 – Sep. 2001: B.Sc. in Surveying Engineering with high honor, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

Pre-University Educations

- 1993- 1997: High School Studies, Imam Sadegh High School, Tehran/Iran.
1990- 1993: Secondary School, Imam Hossein Secondary School, Tehran/Iran.
1985- 1990: Primary Education, Mohammad Rasoolallah Primary School, Tehran/Iran,

Theses

1. Karimi R. (2003): Processing of the observations of precise leveling network of Iran and computations of geopotential numbers for the whole network. M.Sc. thesis, under supervision of Prof. Alireza A. Ardalan, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran, Tehran, Iran, September 2003
2. Karimi R. (2010): Local Gravity Field Modeling. Ph.D. thesis, under supervision of Prof. Alireza A. Ardalan, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran, Tehran, Iran, January 2010
3. Karimi R. (2011): Planetary Gravity Field Modeling. Post Doc. research, under supervision of Prof. Alireza A. Ardalan, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran, Tehran, Iran

Executive Activities

1. Head of Department of Geodesy and Surveying Engineering, Tafresh University, Tafresh, Iran, 11/02/2013 - 03/07/2017

Teaching Experiences

Course Teachings

- Theory of Errors
- Adjustment and Statistical Tests
- Geodetic Surveying
- Micro-geodesy
- Differential Geometry
- Linear Algebra
- Applied Mathematics

Universities at which the courses are taught

- University of Tehran, Tehran, Iran
- Tafresh University, Tafresh, Iran
- Shahid Rajaei Teacher Training University, Tehran, Iran
- Imam Hossein University, Tehran, Iran
- Faculty of NCC, Tehran, Iran
- Faculty of NGO, Tehran, Iran

Research Interests

- Physical geodesy (geodetic boundary value problem, gravity field modeling, reference systems)
- Marine geodesy (mean dynamic topography modeling, mean sea surface modeling)
- Planetary geodesy
- Geometrical geodesy (deformation and displacement analysis)
- Optimization and estimation theory

Publications

Publications at Peer Reviewed Journals

1. Ardalan A.A., Karimi R. and Bilker-Koivula M. (2010): An overdetermined geodetic boundary value problem approach to telluroid and quasi-geoid computations. *Journal of Geodesy*, 84: 97-104
2. Ardalan A.A., Karimi R. and Grafarend E.W. (2010): A New Reference Equipotential Surface, and Reference Ellipsoid for the Planet Mars. *Earth, Moon, and Planets*, 106: 1-13
3. Ardalan A.A., Karimi R. and Poutanen M. (2010): A bias-free geodetic boundary value problem approach to height datum unification. *Journal of Geodesy*, 84: 123-134
4. Karimi R. and Ardalan A.A. (2010): An Alternative direct method towards Mean Dynamic Topography computations. *Ocean Dynamics*, 60: 555-562
5. Ardalan A.A., Zamzam D. and Karimi R. (2011): An alternative method for density variation modeling of the crust based on 3-D gravity inversion. *Journal of Applied Geophysics*, 75: 355-362
6. Ardalan A.A., Karimi R. (2013): On correct application of one-step inversion of gravity data. *Studia Geophysica et Geodaetica*, 57: 401-425

7. Ardalan A.A., Karimi R. (2014): Effect of topographic bias on geoid and reference ellipsoid of Venus, Mars, and the Moon. *Celestial Mechanics and Dynamical Astronomy*, 118: 75-88
8. Karimi R., Ardalan A.A., Vasheghani Farahani S. (2016): Reference surfaces of the planet Mercury from MESSENGER. *Icarus*, 264: 239-245
9. Abdi N., Ardalan A.A., Karimi R. and Rezvani M.H. (2017): Performance assessment of multi-GNSS real-time PPP over Iran. *Advances in Space Research*, 59: 2870-2879
10. Karimi R., Ardalan A.A. and Vasheghani Farahani S. (2017): The size, shape and orientation of the asteroid Vesta based on data from the Dawn mission. *Earth and Planetary Science Letters*, 475: 71-82
11. Abdi N., Ardalan A.A. and Karimi R. (2019): Rapid local ionosphere modeling based on Precise Point Positioning over Iran: A case study under 2014 solar maximum. *Advances in Space Research*, 63: 937-949
12. Sohrabi Athar M., Ardalan A.A. and Karimi R. (2019): Hydrodynamic Tidal Model of the Persian Gulf Based on Spatially Variable Bed Friction Coefficient. *Marine Geodesy*, 42: 25-45
13. Mosayebzadeh M., Ardalan A.A. and Karimi R. (2019): Regional improvement of global geopotential models using GPS/Leveling data. *Studia Geophysica et Geodaetica*, 63: 169-190
14. Ebadi A., Ardalan A.A. and Karimi R. (2019): The Iranian height datum offset from the GBVP solution and spirit leveling/gravimetry data. *Journal of Geodesy*, 93: 1207-1225

Contributions at the International Conferences

1. Ardalan A.A., Shirzaii M. and Karimi R. (2003): On the robust spectral analysis. Case studies: Tropospheric modeling of the GPS data and Mean Sea Level computation from tide gauge data. *Geophysical Research Abstracts* 5: 09775. EGS-EGU-EUG Joint Assembly Nice, France, April 2003
2. Ardalan A.A., Shirzaii M. and Karimi R. (2003): A method for precise estimation of the volume of oil resource via application of first and second derivation of wavelet transformation. Case study: Determination of volume of oil reservoirs in the southern part of Iran. *Geophysical Research Abstracts* 5: 09592. EGS-EGU-EUG Joint Assembly Nice, France, April 2003
3. Karimi R., Ardalan A.A. and Tavakkoli F. (2003): National report on the status of the re-computation of precise leveling of Iran. 23rd General Assembly of the International Union of Geodesy and Geophysics. June 30- July 11 2003 Sapporo, Japan

4. Shirzaii M., Ardalan A.A. and Karimi R. (2003): A method for precise estimation of the volume of oil resources via application of first and second derivatives of wavelet transformation. Case study: Determination of volume of oil reservoirs in the Southern part of Iran. 23rd General Assembly of the International Union of Geodesy and Geophysics. June 30-July 11 2003 Sapporo, Japan
5. Karimi R. and Ardalan A.A. (2004): Processing of the observations of precise leveling network of Iran and computations of geopotential numbers for the whole network. Geophysical Research Abstracts 6: 01074. EGU General Assembly, 25-30 April 2004, Nice, France
6. Ardalan A.A. and Karimi R. (2004): Local gravity field modeling along the precise leveling lines as a way to reduce the need to gravity observations. Case study: Modeling of gravity field along the first order leveling line of Iran. Geophysical Research Abstracts 6: 01073. EGU General Assembly, 25-30 April 2004, Nice, France
7. Ardalan A.A. and Karimi R. (2005): Gravity field modeling along the leveling lines. Geophysical Research Abstracts, 7: 00187, EGU General Assembly, 24-29 April 2005, Vienna, Austria
8. Ardalan A.A., Karimi R. (2006): On the application of FFT and Wavelet Transform in gravity field modeling (solicited paper). EGU General Assembly. Geophysical Research Abstracts, Vol. 8, 09990, 02-07 April 2006, Vienna, Austria
9. Ardalan A.A. and Karimi R. (2006): Comparison between various existing techniques for computation of geopotential coefficients. EGU General Assembly. Geophysical Research Abstracts, Vol. 8, 04377, 02-07 April 2006, Vienna, Austria
10. Ardalan A.A. and Karimi R. (2006): Precise Quasi-Geoid Map Of Iran Based On Minimum-Distance Molodensky Telluroid Mapping. 1st International Symposium of the International Gravity Field Service. August 28-September 01 2006, Istanbul, Turkey
11. Ardalan A.A. and Karimi R. (2007): Precise quasi-geoid map of Iran based on minimum-distance Molodensky telluroid mapping. EGU General Assembly 2007. Geophysical Research Abstracts, Vol. 9, 05273, 15-20 April 2007, Vienna, Austria
12. Ardalan A.A., Grafarend E.W., Karimi R. and Poutanen M. (2008): A new Geodetic Boundary Value Problem approach to high-resolution geoid computations based on relative gravity, geopotential numbers, and Mean Sea Level as the boundary data; Case study: Southwest Finland geoid. Geophysical Research Abstracts, Vol. 10, EGU2008-A-11169, EGU General Assembly, 13-18 April 2008, Vienna, Austria

13. Ardalan A.A., Karimi R. and Bilker-Koivula M. (2008): A new ellipsoidal Boundary Value Problem approach to telluroid and quasigeoid computations. Geophysical Research Abstracts, Vol. 10, EGU2008-A-01082, EGU General Assembly, 13-18 April 2008, Vienna, Austria
14. Ardalan A.A., Karimi R. and Sneeuw N. (2008): Application of satellite altimetry derived Mean Sea Level as a boundary data for an iterative gravimetric boundary value problem approach to the Sea Surface Topography and the marine geoid computations. Geophysical Research Abstracts, Vol. 10, EGU2008-A-05571, EGU General Assembly, 13-18 April 2008, Vienna, Austria
15. Ardalan A.A. and Karimi R. (2008): A minimum distance approach to marine geoid computation. Geophysical Research Abstracts, Vol. 10, EGU2008-A-12082, EGU General Assembly, 13-18 April 2008, Vienna, Austria
16. Ardalan A.A., Karimi R. and Poutanen M. (2008): A boundary value problem approach to height datum unification. Geophysical Research Abstracts, Vol. 10, EGU2008-A-05616, EGU General Assembly, 13-18 April 2008, Vienna, Austria
17. Karimi R. and Ardalan A.A. (2008): An iterative Lagrangian approach to Sea Surface Topography and marine geoid computations following exactly the definition of the geoid according to Gauss and Listing. Vol. 10, EGU2008-A-11754, EGU General Assembly, 13-18 April 2008, Vienna, Austria
18. Ardalan A.A., Safari A., Karimi R. and AllahTavakoli Y. (2012): Simultaneous solution of the geoid and the surface density anomalies. Vol. 14, EGU2012-14039, EGU General Assembly, 22-27 April 2012, Vienna, Austria
19. Amini H., Pahlavani P. and Karimi R. (2014): Detecting and Numerating Vehicles from CCTV Traffic Camera Movies Using a Support Vector Machine. The 13th international Conference on Traffic and Transportation Engineering, complete article, 2014/02/25 - 2014/02/26, Tehran, Iran
20. Talebi S., Pahlavani P. and Karimi R. (2014): Road detection in the purpose of traffic micro simulation based on support vector machines. The 13th international Conference on Traffic and Transportation Engineering, complete article, 2014/02/25 - 2014/02/26, Tehran, Iran
21. Amini H., Pahlavani P. and Karimi R. (2014): 3D Reconstruction of Buldings with gabled and hipped structures using Lidar data. The 1st ISPRS International Conference on Geospatial Information Reseach, complete article, 2014/11/15 - 2014/11/17, Tehran, Iran

Research Projects

1. **Title of the Project:** “Feasibility of combination of terrestrial and satellite gravity data with different spatial resolutions for local gravity field modeling”. **Responsibility:** Supervisor. **Finishing Time:** 04/01/2017. **Type of Project:** Applied Project. **Employer:** National Cartographic Center (NCC). **Place:** Department of Geodesy and Surveying Engineering, Tafresh University, Tafresh, Iran

2. **Title of the Project:** “Iranian Height Datum”. **Responsibility:** Supervisor. **Finishing Time:** 28/08/2017. **Type of Project:** Applied Project. **Employer:** National Cartographic Center (NCC). **Place:** Department of Geodesy and Surveying Engineering, Tafresh University, Tafresh, Iran

3. **Title of the Project:** “Feasibility of using gravity vector observations from global geopotential models in geoid determination”. **Responsibility:** Supervisor. **Finishing Time:** 17/12/2018. **Type of Project:** Applied Project. **Employer:** Tafresh University. **Place:** Department of Geodesy and Surveying Engineering, Tafresh University, Tafresh, Iran

Awards/Honors

1. The top student awards in B.Sc., Amirkabir University of Technology, Tehran, Iran, 2001
2. Ranked the 2nd in the national M.Sc. entrance exam 2001, Iran