CURRICULUM VITÆ

Sarmad Ghader
Associate Professor;
Institute of Geophysics,
University of Tehran

Date: January 8, 2022

Address
Space Physics Dept., Institute of Geophysics, University of Tehran, North Karegar
Ave., Tehran, Iran
Tel.: +98-21-61118373
Fax: +98-21-88009560
E-mail: sghader@ut.ac.ir,
Web site: http://www.ut.ac.ir,
http://geophysics.ut.ac.ir/en
Home page: http://geophysics.ut.ac.ir/faculty/sghader,
http://www.researcherid.com/rid/B-7580-2008

Personal data

> Birth: March 31, 1972 in Kerman, Iran
> Marital Status: Married
> Language: Farsi, English

Degrees

Ph.D.   Numerical Simulation of Geophysical Fluid Dynamics Problems,
          University of Tehran, June 2005

M.Sc.   Computational Fluid Dynamics, University of Tehran, September 2000

B.Sc.   Mechanical Engineering, Amir Kabir University of Technology, May 1995

Thesis
    "Super compact spatial differencing for numerical simulation of fluid dynamics
problems with application to the shallow water equations" (Ph.D. Dissertation,
University of Tehran)

Positions Held

⋆ 10/2014–10/2020: Deputy Director of Graduate Students, Institute of Geo-
  physics, University of Tehran

* 10/2012–8/2013: Guest Researcher, Division of Computational Mathematics, Department of Mathematics, Linköping University, Sweden

* 5/2011–: Associate Professor, Space Physics Department, Institute of Geophysics, University of Tehran

* 9/2005–5/2011: Assistant Professor, Space Physics Department, Institute of Geophysics, University of Tehran

* 3/2006–: Head of Ionosphere Research Section, Institute of Geophysics, University of Tehran

* 10/2006–: Member of Meteorology and Ionosphere Section of Research Center for Earthquake Precursors, Institute of Geophysics, University of Tehran

* 7/2001–9/2005: Research Scientist, Vehicle, Fuel and Environment Research Institute

* 9/1999–9/2005: Research Scientist, Atmospheric Science and Meteorological Research Center

Scientific Societies

* 3/2008–: Iranian Meteorological Society

* 6/2004–: Iranian Geophysical Society

Editorial board

* 1/2015–1/2019: Iranian Journal of Geophysics

Departmental Activities
Head of the Computer section, Institute of Geophysics, University of Tehran (3/2006–10/2012)

Refereeing
Dynamics of Atmospheres and Oceans, Computers and Fluids, Computer Physics Communications, Journal of Applied Fluid Mechanics, Journal of Earth and Space Physics, International Journal of Aerospace Science and Technology, Iranian Journal of Geophysics

Research Supervision and Teaching
Ph.D. Supervisor of H. Golshahi, D. Yazgi, A. Neyestani, M. Gholami, R. Javannejad, S. Gholami, R. Mirzaei, M. Aryamanesh
M.Sc. Supervisor of A. Barkhordarian, A. Amiri, M. Shahsavari, S. Falahat, N. Ghobadi, A. Ghasemi, M. Sharifidoost, A. Asadi, K. Karami, H. Gholami, M. Torbatinejad, R. Mirzaei, E. Ghysari, F. Bahmanzade, Z. Escroochi
Taught full lecture courses on

1. Numerical modeling of the atmosphere and oceans

2. Numerical methods and programming

Research Overview

My current research includes different aspects of the application of high resolution (finite difference) numerical methods for numerical modeling of the atmosphere and oceans. In addition, I have worked extensively with the WRF (Weather Research and Forecasting) model in many research projects.

Computer experience and programming

- Operating systems: DOS, Windows and Linux

- Programming: FORTRAN, OpenMP Parallel Programming

- Linux shell scripting

- Atmospheric models and softwares: MM5, WRF, HYSPLIT

- Packages: GrADS, MET, NCO

- Word processing: LaTeX 2_ε, MS Word

Research Projects

Here is a list of some recent research projects (for organizations outside of the university):

- Development of an ensemble forecasting system for prediction of surface wind over the Persian Gulf and Oman sea

- Using an ensemble prediction system developed for the WRF model to assess the effect of cloud seeding over Iran

- Feasibility study of ground based cloud seeding: Numerical part

- Using an ensemble prediction system developed for the WRF model for prediction of wind field over great Tehran

- Numerical simulation of wind field over Makran area using WRF model (to provide the input of wave and current models)

- Numerical simulation of wind field over the Caspian sea using WRF model (to provide the input of an oceanic wave model)

- Development of an ensemble prediction system for the WRF model with initial condition perturbation and different physical parametrization

- Development of a flood warning prediction system, Meteorological part: precipitation prediction using WRF model (to provide the input of hydrology model)

3

Journal Papers

1. Mahshid K., Ghader S., Shamsnia H., Haghshenas S.A., 2021: An analytical solution to wave dissipation induced by interacting waves and currents with muddy deposits, Dynamics of Atmospheres and Oceans, under revision.

2. Shamsnia H., Haghshenas S.A., Ghader S., Mahshid K., 2021: An analytical model for mass transport calculations in a viscous muddy layer, Applied Ocean Research, Vol. 115, 102816, doi.org/10.1016/j.apor.2021.102816.

3. Moradi Sh., Javanmard S., Ghader S., Azadi M., Gharaylou M., 2021: Numerical modelling of an AgI cloud seeding using WRF model over northwest of Iran, Atmospheric Research, under review.

4. Soltanpour M., Ranji Z., Shibayama T., Ghader S., 2021: Tropical cyclones in the Arabian Sea: Overview and simulation of winds and storm-induced waves, Natural Hazards, Vol. 108, 711–732, doi.org/10.1007/s11069-021-04702-z.

5. Neyestani A., Gustafsson N., Ghader S., Mohebalhojeh A.R., Körnich H., 2021: Operational convective-scale data assimilation over Iran: A comparison between WRF and HARMONIE-AROME, Dynamics of Atmospheres and Oceans, Vol. 95C, 101242 (September 2021), doi.org/10.1016/j.dynatmoce.2021.101242.

6. Borhani R., Ahmadi-Givi F., Ghader S., Mohebalhojeh A.R., 2020: A climatological–dynamical analysis of tropopause foldings over Southwest Asia in the period of 2000–2018, Dynamics of Atmospheres and Oceans, under revision.

7. Gholami S., Ghader S., Khaleghi-zavareh H., Ghafarian P., 2021: Sensitivity of WRF-simulated 10 m wind over the Persian Gulf to different boundary conditions and PBL parameterization schemes, Atmospheric Research, Vol. 247, 105147 (1 January 2021), doi.org/10.1016/j.atmosres.2020.105147.

8. Vahidi Ghazvini M., Ashrafi K., Shafiepour Motlagh M., Pardakhti A., Ghader S., Holsen T.M., 2020: Simulation of atmospheric mercury dispersion and deposition in Tehran city, Air Quality, Atmosphere & Health, Vol. 13, 529-541, doi.org/10.1007/s11869-020-00813-x.

9. Layeghi B., Ghader S., Bidokhti A.A., Azadi M., 2018: Sensitivity of WRF model simulations to physical parameterization over Persian Gulf and Oman Sea during summer monsoon, Journal of Earth System Science, under review.

10. Layeghi B., Bidokhti A.A., Ghader S., Azadi M., 2018: Numerical simulations of oceanographic characteristics of the Persian Gulf and Oman Sea using ROMS model, Indian Journal of Geo Marine Sciences , accepted.

11. Rahnemania A., Bidokhti A.A., Ezam M., Lari K., Ghader S., 2019: A numerical study of the frontal system between the inflow and outflow waters

in the Persian Gulf, Journal of Applied Fluid Mechanics, Vol. 12, No., 5, 1475-1486.

12. Feyzinejad M., Malakooti H., Sadrinasab M., Ghader S., 2019: Radiological dose assessment by means of a coupled WRF-HYSPLIT model under normal operation of Bushehr nuclear power plant, Pollution, Vol. 5(2), 429-448. doi: 10.22059/poll.2018.255275.428.

13. Haghshenas , S.A., Ghader S., Yazgi, D., Delkhosh, E., Rashedi Birgani., Razavi Arab, A., N., Hajisalimi, Z., Nemati, M. H., Soltanpour, M., Jedari Attari M., 2018: Iranian seas waters forecast - Part I: An improved model for the Persian Gulf, Journal of Coastal Research, SI No. 85, 1216-1220.

14. Karami Kh., Ghader S., Mousavi S.V., 2018: Upward propagating Rossby waves as influenced by the absorptive and reflective states of the stratospheric polar vortex, Dynamics of Atmospheres and Oceans, submitted.

15. Zakeri Z., Azadi M., Ghader S., 2018: The impact of different background errors in the assimilation of satellite radiances and in-situ observational data using WRFDA for three rainfall events over Iran, Advances in Space Research, Vol. 61, 433-467.

16. Yazgi D., Mohebalhojeh A.R., Ghader S., 2017: Using polynomial regression in designing the time filters for the leapfrog time-stepping scheme, Mon. Wea. Rev., Vol. 145, 1779-1795.

17. JavanNezhad R., Meshkatee A.H., Ghader S., Ahmadi-Givi F., 2016: High-order compact MacCormack scheme for two-dimensional compressible and nonhydrostatic equations of the atmosphere, Dynamics of Atmospheres and Oceans, Vol. 75, 102-117.

18. Ghader S., Yazgi D., Soltanpour M., Nemati M.H., 2015: Using an ensemble prediction system developed for the WRF model to predict surface wind over Persian Gulf using, Hydrophysics, Vol. 1(1), pp. 41-54. [in Persian]

19. JavanNezhad R., Meshkatee A.H., Ghader S., Ahmadi-Givi F., 2016: Numerical solution of conservative form of 2-D compressible and nonhydrostatic equations of atmosphere using Compact MacCormack scheme, Iranian Journal of Geophysics, Vol. 10(1), pp. 28-46. [in Persian]

20. Gharayloo M., Sabetghadam S., Ghader S., 2016: Feasibility study of lightning event prediction using WRF mesoscale model in Iran, Journal of the Earth and Space Physics, Vol. 42(1), pp 213-220. [in Persian]

21. Ghader S., Yazgi, D., Haghshenas , S.A., Razavi Arab, A., Jedari Attari, M., Bakhtiari, A., Zinsazboroujerdi, H., 2016: Hindcasting tropical storm events in the Oman sea, Journal of Coastal Research, SI No. 75(2), 1087-1091. doi: 10.2112/SI75-218.1

22. Sedigh Marvasti S., Gnanadesikan A. , Bidokhti A. A., Dunne J. P., Ghader S., 2016: Challenges in modelling spatiotemporally varying phytoplankton blooms in the Northwestern Arabian Sea and Gulf of Oman, Biogeosciences, Vol. 13, 1049-1069, doi:10.5194/bg-13-1049-2016.

23. Nordström J., Ghader S., 2015: A new well-posed vorticity divergence formulation of the shallow water equations, Ocean Modelling, Vol. 93, 1-6, doi: 10.1016/j.ocemod.2015.07.001.

24. Ghader S., Nordström J., 2015: High-order compact finite difference schemes for the vorticity-divergence representation of the spherical shallow water equations, Int. J. Numer. Methods in Fluids, Vol. 78(12), 709-738.

25. Jafari M., Bidokhti A.A., Ghader S., Javid A.H., Karami. Khaniki A., 2015: Study on annual variability of mixed layer depth in Oman sea by GOTM model, Advances in Environmental Biology, Vol. 9(2), 842-850.

26. Ghader S., Nordström J., 2014: Revisiting well-posed boundary conditions for the shallow water equations, Dynamics of Atmospheres and Oceans, Vol. 66, 1-9, doi: 10.1016/ j.dynatmoce.2014.01.002.

27. Ashrafi K., Shafiepour-Motlagh M., Aslemand A. and Ghader S., 2014: Dust storm simulation over Iran using HYSPLIT, Journal of Environmental Health, Science and Engineering (JESHE), 12:9, doi:10.1186/2052-336X-12-9.

28. Taghavi F., Neyestani A., and Ghader S., 2013: Short range precipitation forecasts evaluation of WRF model over IRAN, Journal of the Earth and Space Physics, Vol. 39(2), pp 145-170. [in Persian]

29. Gholami H., Mohebalhojeh A. R., and Ghader S., 2013: Application of the spectral method to solve the limited-area shallow-water equations, Journal of the Earth and Space Physics, Vol. 39(1), pp 167-178. [in Persian]

30. Ghader S., Nordström J., 2013: High-order compact finite difference schemes for the spherical shallow water equations, Int. J. Numer. Methods in Fluids, submitted.

31. Madjidi F., Bidokhti A. A., Ghader S. and Mansori N., 2013: Cooling and warming effects of a grass covered area and adjacent asphalt area in a hot day, International Journal of Occupational Hygiene, Vol. 5(2), 56-62.

32. Karami Kh., Ghader S., Bidokhti A. A., Joghataei M., Neyestani A., Mohammadabadi A., 2012: Planetary and tidal wave-type oscillations in the ionospheric sporadic-E layers over Tehran region, Journal of Geophysical Research, Vol. 117, A04313, 6 PP, doi:10.1029/2011JA017466.

33. Ghader S., Ghasemi A., Banazadeh M. R. and Mansoury D., 2012: High-Order Compact Scheme for Boussinesq Equations: Implementation and Numerical Boundary Condition Issue, Int. J. Numer. Methods in Fluids, Vol. 69, 590-605.

34. Madjidi F., Bidokhti A. A., Ghader S. and Mansori N., 2011: A numerical model for the study of cooling effect of grass-covered park in a humidity area, SOLA, Vol. 7, 185-188.

35. Bidokhti A., Ghader S., and Shahsavari M., 2011: Numerical Simulation of DownSlope Flows in a Confined Stratified Region, Journal of the Earth and Space Physics, Vol. 37(3), pp 229-240. [in Persian]

36. Asadi A., Ahmadi Givi F., Ghader S., and Mohebalhojeh A. R., 2012: Dynamic Analysis of the Mediterranean Storm Track Using Rossby Wave Activity and Fluxes, Iranian Journal of Geophysics, Vol. 5(4), pp. 31-45. [in Persian]

37. Ghader S., Karami Kh., and Raeen A., 2011: Validation of IRI-2007 Ionospheric Model Predictions over Tehran Area During a Low Solar Activity Period Using Data of Ionospheric Station of The Institute of Geophysics University of Tehran, Iranian Journal of Geophysics, Vol. 5(2), pp. 16-27. [in Persian]

38. Ghader S., Karami Kh., and Raeen A., 2011: Diurnal and Seasonal Variation of the Total Electron Content and Peak Height of the F2-Ionospheric Layer (Hmf2) over Tehran Area and Comparisons with IRI-2007 Model Predictions, Iranian Journal of Geophysics, Vol. 5(2), pp. 28-37. [in Persian]

39. Karami K., Ghader S. and Raeen, 2011: Comparison of Peak Characteristics of F2 Ionospheric Layer over Tehran Region at a Low Solar Activity Period with IRI-2001 and IRI-2007 Model Predictions, Advances in Space Research, Vol. 48, pp 1049-1055.

40. Golshahy H., Ghader S., Ahmadi-Givi F., 2011: Accuracy Assessment of the Super Compact and Combined Compact Schemes for Spatial Differencing of a Two-layer Oceanic Model: Presentation of Linear Inertia-Gravity and Rossby Waves, Ocean Modelling, Vol. 37(1-2), pp 49-63.

41. Ghader S., Bidokhti A. A., and Falahat S., 2010: Numerical Solution of Conservative Form of Two-Dimensional Compressible Equations of Atmosphere Using Second-Order MacCormack Scheme, Journal of the Earth and Space Physics, Vol. 37(2), pp 171-191. [in Persian]

42. Ghader S., Ahmadi-Givi F., Golshahi H., 2010: Comparison Of The Sixth-Order Super Compact And Combined Compact Methods For Spatial Discretization of a Two-Layer Shallow Water Model: Linear Inertia-Gravity And

Rossby Waves, Iranian Journal of Geophysics, Vol. 4(2), pp 49-69. [in Persian]

43. Ghader S., Ghasemi A., Banazadeh M. R. and Mansoury D., 2011: Numerical Solution of Incompressible Boussinesq Equations Using Fourth-Order Compact Scheme: Lock-Exchange Flow, Journal of the Earth and Space Physics, Vol. 37(1), pp. 181-197. [in Persian]

44. Ghader S., Ghasemi A., Banazadeh M. R. and Mansoury D., 2010: Implementation of the Fourth-Order Compact Scheme for Numerical Simulation of Bottom Gravity Current Over a Slope, Iranian Journal of Geophysics, Vol. 4(1), pp. 58-71. [in Persian]

45. Ghader S., Bidokhti A. A., and Falahat S., 2011: Numerical Solution of Unsteady Two-Dimensional Rossby Adjustment Problem Using Fourth-Order Compact MacCormack Scheme, Journal of the Earth and Space Physics, Vol. 36(3), pp 151-173. [in Persian]

46. Ghader S., Mohebalhojeh A. R. and Esfahanian V., 2009: On the Spectral Convergence of the Super Compact Finite-Difference Schemes for the f-Plane Shallow Water Equations, Mon. Wea. Rev., Vol. 137, pp. 2393-2406.

47. Ghader S., Saba N., 2009: Study of Variations of Critical Frequency of Ionospheric F2-Region as a Temporal Precursor for the Qom Earthquake, Journal of the Earth and Space Physics, Vol. 35(3), pp 117-125. [in Persian]

48. Ashrafi Kh., Ghader S., Esfahanian V., Motesadi S., 2008: Site Locating of Air Quality Monitoring Stations over Great Tehran, Journal of Environmental Studies, Vol. 33, No. 44, pp 1-10. [in Persian]

49. Esfahanian V. and Ghader S., 2007: Accuracy Assessment of Super Compact and Compact Schemes for Spatial Differencing of Linearized Shallow Water Equations, Journal of the Earth and Space Physics, Vol. 33(1), pp 107-118. [in Persian]

50. Ghader S., and Esfahanian V., 2006: Numerical Solution of the Conservative form of the Shallow Water Equations Using Sixth-Order Super Compact Scheme, Journal of the Earth and Space Physics, Vol. 32(2), pp 31-44. [in Persian]

51. Ghader S., and Esfahanian V., 2006: Generalized Combined Compact Differencing method, WSEAS Transactions on Fluid Mechanics, Vol. 1, Issue 5, pp. 445-449.

52. Esfahanian V., Ghader S., 2006: Numerical Solution of Parabolized Stability Equations Using Super-Compact Scheme, Int. J. Aerospace Science and Technology, Vol. 3, No. 2, pp. 77-85.

53. Esfahanian V., Ghader S., and Mohebalhojeh A. R., 2005: On the Use of Super Compact Scheme for Spatial Differencing in Numerical Models of the Atmosphere, Q. J. Roy. Meteorol. Soc., Vol. 131, pp. 2109-2129.

54. Esfahanian V., Ghader S. and Kh. Ashrafi, 2004: Accuracy Analysis of Super Compact Scheme in Nonuniform Grid with Application to Parabolized Stability Equations, Int. J. Numer. Methods in Fluids, Vol. 46, pp. 485-505, 2004.

55. Esfahanian V., Ghader S., 2003: Numerical Solution of the Shallow water Equations Using Compact Delta Formulation, Journal of Faculty of Eng. University of Tehran, Vol. 37(3), pp 335-344. [in Persian]

Conference Papers

1. Ghader S., Yazgi D., Soltanpour M., Nemati M.H., "On the use of an ensemble forecasting system for prediction of surface wind over the Persian Gulf" in proceedings of the 12th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2016), Tehran, Iran, 31 Oct. - 2 Nov. 2016.

2. Gholami S., Ghader S., Khaleghi-Zavareh H., Ghafarian P., "Intercomparison of six planetary boundary layer schemes in the wrf-ARW model on surface wind simulations of Persian Gulf" in proceedings of the 12th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2016), Tehran, Iran, 31 Oct. - 2 Nov. 2016.

3. Rashedi N., Ghader S., Haghshenas S.A., "An artificial neural network strategy to improve wind speed hindcasting" in proceedings of the 12th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2016), Tehran, Iran, 31 Oct. - 2 Nov. 2016.

4. Haghshenas S.A., Razavi-Arab A., Haghighi A., Ghader S., "A GP-based approach for improving wind-wave simulations over the Persian Gulf" in proceedings of the 12th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2016), Tehran, Iran, 31 Oct. - 2 Nov. 2016.

5. Babagoli J., Bidokhti A.A., Shiea M., Ghader S., "An analytic model for the structure of the gravity current from the middle to the southern" in proceedings of the 12th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2016), Tehran, Iran, 31 Oct. - 2 Nov. 2016.

6. Ghader S., Yazgi, D., Haghshenas , S.A., Razavi Arab, A., Jedari Attari, M., Bakhtiari, A., Zinsazboroujerdi, H., 2016: Hindcasting tropical storm events in the Oman sea, Proceedings of the 14th International Coastal Symposium, Sydney, Australia, 6-11 March 2016.

7. Nordström J., Ghader S., 2015: A new well-posed vorticity divergence formulation of the shallow water equations, SIAM Conference on Mathematical

and Computational Issues in the Geoscience, Stanford University, Stanford, California USA, June 29 – July 2, 2015.

8. Gharaylou M., Sabetghadam S., Ghader S., "Prediction of lightning potential index using WRF model: A Case study over Iran", 26th General Assembly of the IUGG, Prague, Czech Republic, 22 June-2 July, 2015.

9. Ghader S., Montazeri-Namin M., Chegini F., Bohlouly A., "Hindcast of Surface Wind Field over the Caspian Sea Using WRF Model" in proceedings of the 11th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2014), Tehran, Iran, 24-26 Nov. 2014.

10. Ghader S., "Numerical solution of spherical shallow water equations using combined compact scheme," The 16th Iranian Geophysics Conference, Tehran, Iran, May 13-15, 2014. [in Persian]

11. Ghader S., Nordstom J., "Revisiting well-posed boundary conditions for the shallow water equations," The 16th Iranian Geophysics Conference, Tehran, Iran, May 13-15, 2014. [in Persian]

12. Mirzaei R., Ghader S., Mazraeh-Farahani M., and A. A. Bidokhti, "Numerical solution of the one-dimensional shallow water equations using compact MacCormack scheme," The 16th Iranian Geophysics Conference, Tehran, Iran, May 13-15, 2014. [in Persian]

13. Ghader S., Ahmadi-Givi F., and Golshahy H., "Numerical Solution of Limited Area Shallow Water Equations Using Compact Scheme," The 15th Iranian Geophysics Conference, Tehran, Iran, May 15-17, 2012. [in Persian]

14. Karami Kh., Ghader S. and A. A. Bidokhti, "Presence of Wave-Like Disturbances in the Ionospheric Sporadic-E Layer over Tehran Region," The 15th Iranian Geophysics Conference, Tehran, Iran, May 15-17, 2012. [in Persian]

15. Saba N., Ghader S., "Study of Daily Ionosoheric Parameters of D Region for Tehran Ionospheric Station," The 15th Iranian Geophysics Conference, Tehran, Iran, May 15-17, 2012. [in Persian]

16. Yazgi H., Mohebalhojeh A. R. and Ghader S., "Impact of Boundary Conditions on the Maintenance of Balance in the Limited-Area Shallow Water Equations," The 15th Iranian Geophysics Conference, Tehran, Iran, May 15-17, 2012. [in Persian]

17. Gholami H., Mohebalhojeh A. R. and Ghader S., "Application of the Spectral Method to Solve the Limited-Area Shallow-Water Equations," The 15th Iranian Geophysics Conference, Tehran, Iran, May 15-17, 2012. [in Persian]

18. Ghader S., Sadighzadeh A., Yousefi H. and Sabri R., "Pollutant Dispersion Simulation of a Power-Plant's stack.," The 15th Iranian Geophysics Conference, Tehran, Iran, May 15-17, 2012. [in Persian]

19. Ghader S., Ahmadi-Givi F., and Golshahy H., "Numerical Solution of Two-Layer Shallow Water Equations Using Sixth-Order Compined Compact Scheme," 14th Annual Fluid Dynamics conference, Birjand, Iran, 1-3 May 2012. [in Persian]

20. Sadighzadeh A., Ghader S., Yousefi H. and Sabri R., "Pollutant Dispersion Simulation of a Power-Plant's stack, A Case Study.," 14th Annual Fluid Dynamics conference, Birjand, Iran, 1-3 May 2012. [in Persian]

21. Ghader S., Ahmadi-Givi F., and Golshahy H., "General Discrete Dispersion Relation for Two-Layer Shallow Water Equations on Different Numerical Grids," 13th Annual and 2nd International Fluid Dynamics conference, Shiraz, Iran, 26-28 October 2010.

22. Karami K., Ghader S., Raeen A., "Comparison Between the Observed Maximum Electron Density of F2 Layer over Tehran Area and IRI-2001 Model Predictions," Annual Physics Conference of Iran, Hamedan, Iran, September 11-14, 2010. [in Persian]

23. Ghader S., Ghasemi A., Banazadeh M., Mansoori D., "Numerical Solution of Incompressible Boussinesq Equations Using Fourth Order Compact Method: Numerical Simulation of Bottom Gravity Current," The 14th Iranian Geophysics Conference, Tehran, Iran, May 11-13, 2010. [in Persian]

24. Asadi A., Mohebalhojeh A., Ahmadi-givi F., and Ghader S., "Investigation of the North Atlantic Storm Track Dynamics Based on Wave Activity," The 14th Iranian Geophysics Conference, Tehran, Iran, May 11-13, 2010. [in Persian]

25. Ghader S. Ahmadi-givi F., and Golshahi H., "Comparison of the Second-Order Centered and the Fourth-Order Compact Finite Difference Methods for Numerical Solution of Two-Layer Oceanic Shallow Water Equations on Different Numerical Grids," The 8th Conference of Marine Science and Technology, Khoramshahr, Iran, Jan. 27-28, 2010. [in Persian]

26. Ghader S. Ahmadi-givi F., and Golshahi H., "Comparison of the Super Compact and Combined Compact Schemes for Spatial Differencing of the Linearized Two-Layer Shallow Water Equations," The 8th NWP Conference, IRIMO, Tehran, Iran, Dec. 23, 2009. [in Persian]

27. Ashrafi Kh., Ghader S. and Sedaghat-kerdar A., "Application of Breeding Ensemble Forecasting Method to WRF Model," The 8th NWP Conference, IRIMO, Tehran, Iran, Dec. 23, 2009. [in Persian]

28. Ghader S., Bidokhti A., Falahat S., "Numerical Solution of the Conservative Form of 2-D Nonhydrostatic, Compressible and Inviscid Equations of an Adiabatic Atmosphere Using Fourth-Order Compact MacCormack-Type Scheme," The 12th Iranian Fluid Dynamics Conference, Babol, Iran, April 28-30, 2009. [in Persian]

29. Ghader S., Ghasemi A., Banazadeh M., Mansoori D., "Numerical Solution of Incompressible Boussinesq Equations Using Fourth Order Compact Method: Case Study Lock-Exchange Flow," The 12th Iranian Fluid Dynamics Conference, Babol, Iran, April 28-30, 2009. [in Persian]

30. Ashrafi Kh., Ghader S., Esfahanian V., " Application of Breeding Ensemble Forecasting Method to MM5 Model over Iran," The 12th Iranian Fluid Dynamics Conference, Babol, Iran, April 28-30, 2009. [in Persian]

31. Ghader S., Ghasemi A., Banazadeh M., Mansoori D., "On the use of High Resolution Numerical Schemes in Ocean Models: Case Study Gravity Current," Second Disaster Management Conference, Tehran, Iran, 24 December 2008.

32. Bidokhti A., Ghader S., and Shahsavari M., "Numerical Simulation of Internal Gravity Waves Generated by Buoyancy Forcing in a Confined Stratified Region," 12th Asian Congress of Fluid Mechanics, Daejeon, Korea, 18-21 August 2008.

33. Bidokhti A., Ghader S., Shahsavari M., "Numerical Simulation of Internal Gravity Waves Generated over Slop by Buoyancy Forcing in a Confined Stratified Region," The 11th Iranian Fluid Dynamics Conference, Tehran, Iran, May 27-29, 2008. [in Persian]

34. Bidokhti A., Ghader S., Ashrafi Kh., Ghobadi N., "Effect of Different Meteorological Conditions on the Concentration of Air Pollutants over Tehran," Second Conference on Environmental Engineering, Tehran, Iran, May 17-21 2008.

35. Saba N., Ghader S., "Characteristics of the Ionospheric F2-Region in Kahak's Earthquake," The first conference on earthquake precursors, University of Tehran, Iran, March 5, 2008. [in Persian]

36. Ghader S., Bidokhti A., Falahat S., "Numerical Solution of the Unsteady Geostrophic Adjustment Problem Using Compact MacCormack Type Scheme," The Seventh NWP Conference, IRIMO, Iran, Dec. 19, 2007. [in Persian]

37. Ashrafi Kh., Ghader S., Esfahanian V., "Application of the Breeding Ensemble Forecasting Method to the Lorenz Model," The Seventh NWP Conference, IRIMO, Iran, Dec. 19, 2007. [in Persian]

38. Ghader S., Ahmadi-Givi F., Amiri A., "Numerical Solution of the Spherical Shallow water Equations," Annual Physics Conference of Iran, Yasuj, Iran, August 27-30, 2007. [in Persian]

39. Bidokhti A., Ghader S., Shahsavari M., "Numerical Simulation of Internal Gravity Waves Generated by Buoyancy Forcing in a Confined Stratified Region," Annual Physics Conference of Iran, Yasuj, Iran, August 27-30, 2007. [in Persian]

40. Ghader S., Bidokhti A., Barkhordarian A., "Numerical Solution of Incompressible Equations of the Atmosphere with Application to Sea Breeze Phenomenon," 14th Spring Theoretical Physics Conference, Tehran, Iran, May 16-18, 2007. [in Persian]

41. Ghader S., Ahmadi-Givi F., Amiri A., "Compact Spatial Differencing for Spherical Shallow Water Equations," EGU General Assembly, Vienna, Austria, April 15-20 2007.

42. Ghader S., Bidokhti A., Barkhordarian A., "Compact Finite Difference Scheme for Simulation of the Sea Breeze over Bushehr Area," EGU General Assembly, Vienna, Austria, April 15-20 2007.

43. Ashrafi Kh., Ghader S., Esfahanian V., Motesadi S., "Determining the Location of Air Pollutant Monitoring Stations over Great Tehran," First Conference on Environmental Engineering, Tehran, Iran, February 17-20 2007.

44. Ghader S., Esfahanian V., "Investigation of the effect of Numerical Diffusion on the Accuracy of Numerical Solution of the Shallow Water Equations," The Sixth NWP Conference, IRIMO, Iran, Dec. 20, 2006. [in Persian]

45. Bidokhti A., Ghader S., Shahsavari M., "Numerical Simulation of Internal Waves in a Uniformly Stratified Region," The Sixth NWP Conference, IRIMO, Iran, Dec. 20, 2006. [in Persian]

46. Ghader S., Esfahanian V., "Numerical Solution of the Shallow Water Equations Using Combined Compact Scheme," The 10th Iranian Fluid Dynamics Conference, Yazd, Iran, Oct. 31- Nov. 2, 2006. [in Persian]

47. Ghader S., and Esfahanian V., "Generalized Combined Compact Differencing method," 4th WSEAS int. conf. on fluid mechanics, Crete, Greece, August 21-23, 2006.

48. Ghader S., "Combined Compact Spatial Differencing for the f-Plane Shallow Water Equations," EGU General Assembly, Vienna, Austria, April 2-7 2006.

49. Ghader S., Esfahanian V. and Mohebalhojeh A. R., "Numerical Solution of the f-plane Shallow Water Equations Using Sixth-Order Super Compact Scheme," The 12th Iranian Geophysics Conference, Tehran, Iran, Feb. 21-23, 2006. [in Persian]

50. Ghader S., Esfahanian V. and Mohebalhojeh A. R., "Numerical Solution of the f-plane Shallow Water Equations Using Fourth-Order Compact Method," The Fifth NWP Conference, IRIMO, Iran, Dec. 21, 2005. [in Persian]

51. Esfahanian V., Ghader S., "Numerical Solution of the Conservative form of the Shallow Water Equations Using Sixth-Order Super Compact Scheme," The 9th Iranian Fluid Dynamics Conference, Shiraz, Iran, March 7-9, 2005. [in Persian]

52. Esfahanian V., Ghader S. and Mohebalhojeh A. R., "Application of Super Compact Method for Spatial Differencing in Spherical Geometry: Solution of the Poisson Equation,," The Fourth NWP Conference, IRIMO, Iran, Dec. 20, 2004. [in Persian]

53. Esfahanian V., Ghader S. and Mohebalhojeh A. R., "Super Compact Spatial Differencing for the Linear and Nonlinear Geophysical Fluid Dynamics Problems," The Third International Conference on Computational Fluid Dynamics (ICCFD3), Toronto, Canada, July 12-16 2004.

54. Esfahanian V., and Ghader S., "Super Compact Spatial Differencing for the Linear and Nonlinear Geophysical Fluid Dynamics Problems," Oral Presentation at the Eleventh Regional Conference on Mathematical Physics and IPM Spring Conference, May 3-6, 2004.

55. Ghader S., Esfahanian V., and Mohebalhojeh A. R., "On the Use of Super Compact Scheme for Spatial Differencing in Numerical Models of the Atmosphere," EGU- 1st General Assembly, Nice, France, April 25-30 2004.

56. Esfahanian V. and Ghader S., "Numerical Solution of the Conservative form of the Shallow Water Equations Using Second-Order and Fourth-Order Compact Schemes," The Third NWP Conference, IRIMO, Iran, Dec. 15, 2003. [in Persian]

57. Esfahanian V. and Ghader S., "Spatial Differencing of 2-D Numerical Grids Using Super Compact Scheme," The 11$^{\text{th}}$ Iranian Geophysics Conference, Tehran, Iran, Dec. 1-3, 2003. [in Persian]

58. Esfahanian V., Ghader S., "Accuracy Analysis of Super Compact Scheme in Nonuniform Grid," The 8$^{\text{th}}$ Iranian Fluid Dynamics Conference, Tabriz, Iran, Sep. 8-10, 2003. [in Persian]

59. Esfahanian V., Ghader S., "Numerical Solution of the Shallow water Equations Using Compact Delta Formulation," The Eleventh Annual Conference of the CFD Society of Canada, Canada, May 28-30 2003.

60. Esfahanian V. and Ghader S., "Comparison of Compact and Super Compact Schemes for Spatial Differencing of A and C grids," The Second NWP Conference, IRIMO, Iran, Oct. 9, 2002. [in Persian]

61. Esfahanian V., Ghader S., Ashrafi Kh., "Numerical Solution of The Filtered Barotropic Model Using Super Compact Scheme," The Ninth Asian Congress of Fluid Mechanics, Isfahan, Iran, May, 27-31, 2002.

62. Esfahanian V., Ashrafi Kh. and Ghader S., "Preparing a General Software for Objective Analysis," The First NWP Conference, IRIMO, Iran, July 31, 2001. [in Persian]

63. Esfahanian V., Ashrafi Kh. and Ghader S., "Numerical Solution of the Filtered Barotropic and Baroclinic Equations," The First NWP Conference, IR-IMO, Iran, July 31, 2001. [in Persian]

64. Esfahanian V., Ghader S., "Numerical Solution of Parabolized Stability Equations Using Super-Compact Scheme," The Ninth Annual Conference of the CFD Society of Canada, Canada, May 27-29 2001.

65. Esfahanian V., Ghader S., "Numerical Solution of Linearized PSE Equations Using Super-Compact Scheme," First International and Third Biennial Conference of the Iranian Aerospace Society, Tehran, Iran, Dec. 30, 2000- Jan. 1, 2001. [in Persian]