Curriculum Vitae

Dr. Nafiseh Pegahfar

Iranian National Institute for Oceanography and Atmospheric Science (INIOAS)

Assistant Professor in **Meteorology**

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Academic Background

- PhD. :in Department of Meteorology, Space Group, Institute of Geophysics, University of Tehran., 2006-2011.
- M. Sc.in Department of Meteorology, Space Group, Institute of Geophysics, University of Tehran., 2002 – 2005.
- B. Sc. in Nuclear Physics, University of Tehran, 1997 – 2001.

Positions & Work Experiences & Memberships

- Assistant Professor in Atmospheric Research Center, Iranian National Institute for Oceanography and Atmospheric Science, 2013 to now:

Teaching Experiences

- 2013: Introduction to meteorology, Semnan University.
- 2013: Statistic in meteorology, Semnan University.
- 2008-2012:
  - Dynamic Meteorology (I), Teacher Assistant
  - Dynamic Meteorology (II), Teacher Assistant
  - Boundary Layer Effect on Dispersion of Stacks
  - Boundary Layer, Teacher Assistant
  - Fortran Programming, Teacher Assistant

Research Activities

Research Interests

- Tropical Cyclone
- Numerical Modeling
- Lightening Modeling
- Cloud Modeling
- Cloud Seeding
- Boundary Layer

Full Papers

- **International Journals**

  - **Pegahfar, N.,** Zawar-Reza, P., 2016, Evaluation of Local Similarity Theory under Unstable Stratification over an Urban Area with Complex Topography (Tehran), Submitted to Journal of Meteorology and Applied Physics.

  - Farahani, M., **Pegahfar, N.,** Gharaylou, M., 2016, The Application of Wavelet Theory in the Reconstruction of Total Ozone Gap Data, Submitted to Journal of Space Research.

- Gharaylou, M., **Pegahfar, N.,** 2016, Influence of Tilted Cloud Characteristics on Intra-Cloud Electric Field and lightning. Under preparation.

- Bidokhti, A.A., Gharaylou, M., **Pegahfar, N.,** Sabetghadam, S., Rezazadeh, M., 2016, The Characteristics of Extreme Dust Events Observed over Two Urban Areas in Iran, Accepted in Journal of Earth System Sciences.

- **Pegahfar, N.,** Bidokhti, A.A. , 2013, Similarity Relations in A Stable and Relatively Neutral Surface Layer in an Urban Area with Complex Topography (Tehran), Environ. Fluid Mech., 13:1–31. DOI 10.1007/s10652-012-9257-0.
- **Pegahfar, N.,** Bidokhti, A.A. , P, Zawar-Reza., 2011, Study of Vertical Wind Profiles in an Urban Area with Complex Terrain (Tehran), J. Earth Syst. Sci. 120, No. 5, pp. 825–841.

Persian Journals (with and without ISC index):

- Ghafarian, P., **Pegahfar, N.,** Owlad, E., 2016, The Large and Synoptic Scales of Atmospheric Patterns of Heavy Snow in Gilan Province, Accepted in journal of Nivar.

- Yazdani, M., Asadi, M., **Pegahfar, N.,** Heydari, M., 2016, Statistical Analysis of Periodic Oscillation of Some Climatologically Parameters for Kordestan Stations, accepted in Journal of Geography and planning.

- **Pegahfar, N.**, Gharaylou, M., 2015, Implementation of Three Sets of Electric Charge Transfer Parameterization in a One-Dimensional Cloud Model, Journal of Earth and Space Physics, Vol. 41, No.1, 1394 (Persian Calendar), pp. 85-97.

- Gharaylou, M., **Pegahfar, N.,** Bidokhti, A.A. , 2015, Electrical Charge Transfer Modeling (Lightning) in Cloud and Its Implementation in a One-Dimensional Prognostic Cloud Model, Journal of Earth and Space Physics, Vol. 40, No.1, 1393 (Persian Calendar), pp. 137-148.

- Farahani, M.M., **Pegahfar, N.,** Gharaylou, M., 2013, Validation of Ordinary and Complex Methods to Fill Total Ozone Gap, Journal of Earth and Space Physics, Vol. 39, No. 3, 1392 (Persian Calendar), pp. 177-189.

- **Pegahfar**, N., Bidokhti, A.A. , Zawar-Reza, P., 2013, Parameterization of Nocturnal Stable Boundary Layer Height (NSBLH) and Effect of NSBLH on Air Pollution in an Urban Area with Complex Topography (Tehran), Journal of Earth and Space Physics, Vol. 38, No 4, 1391 (Persian Calendar), pp. 189-206.

- **Pegahfar, N.,** Bidokhti, A.A. , Zawar-Reza, P., 2013, A Study of Non-Dimensional Wind Gradient and Turbulent Intensity, Using the Monin-Obukhov Similarity Theory in a Roughness Sub-Layer of an Urban Area with Complex Topography (Tehran), Journal of Iranian Geophysics Society, Vol. 5, No. 2, 1390 (Persian Calendar), pp. 69-85.

International Conference

- **Pegahfar, N.,** Ghafarian, P., 2015, Synoptic Analysis of Haiyan Tropical Cyclone, 26th International Union of Geodesy and Geophysics (IUGG) GENERAL ASSEMBLY, Prague, Republic of CZECH, 22 June-2 July 2015.

- Ghafarian, P., **Pegahfar, N.,** Owlad, E., 2015, Verification of Weather Research and Forecasting Model in Predicting Heavy Precipitation from Tropical Cyclone Gonu off the Coast of Iran, 26th International Union of Geodesy and Geophysics (IUGG) GENERAL ASSEMBLY, Prague, Republic of CZECH, 22 June-2 July 2015.

- Ghafarian, P., **Pegahfar, N.,** Owlad, E., 2015, The Synoptic and Dynamic Structure of Heavy Snow Event over Southern Coast of the Caspian Sea on February 2014, 26th International Union of Geodesy and Geophysics (IUGG) GENERAL ASSEMBLY, Prague, Republic of CZECH, 22 June-2 July 2015.

- Gharaylou, M., **Pegahfar, N.,** 2015**,** Numerical Simulation of Influence of Tilting Effect on Intra-Cloud lightening Using an Explicit 1-D Time-Dependent Cloud Model, 26th International Union of Geodesy and Geophysics (IUGG) GENERAL ASSEMBLY, Prague, Republic of CZECH, 22 June-2 July 2015.

- **Pegahfar, N.,** Ghafarian, P., 2014, Analysis of Two Dynamic Parameters of CAPE & Helicity for Haiyan Tropical Cyclone, The 11th International Conference on Coasts, Ports and Marine Structures (ICOPMAS), Tehran, Iran, 24-26 Nov 2014.

- **Pegahfar, N.,** Bidokhti, A.A. , P, Zawar-Reza., 2009, Field Study of Observational Wind Profile in a Complex Terrain, EGU Congeries, Vienna, Austria 19-24 April 2009.
- **Pegahfar, N.,** 2008, Potential Vorticity View to Tropopause Folding in Weather Disturbances Affecting Iran in Nov-Dec 2003, EGU Congeries, Vienna, Austria 19-24 April 2009.

Iranian Conference

- **Pegahfar, N.**, Gharaylou, M., Ghafarian, P., 2016, Entropy Convective Flux for Haiyan Tropical Cyclone, Submitted to 41th COSPAR Scientific Assembly, Istanbul, Turkey, 30 June-4 August, 2016.

- **Pegahfar, N.**, Gharaylou, M., Ghafarian, P., 2016, Multiscale Analysis of Entropy During Haiyan Tropical Cyclone, Submitted to 17th Iranian Geophysics Conference, Tehran, Iran, 13-15 May 2016.
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- **Pegahfar, N.**, Shoushtari, M. H., Gharaylou, M., 2014, Simulation of Charge Transfer Using Three Sets of Parametric Relations: TAK, SAN and JGZ, 16th Iranian Geophysics Conference, Tehran, Iran, 13-15 May 2014.

- Gharaylou, M.,**Pegahfar, N.**, 2014, Simulation of Intra-Cloud Electric Field and Lightening Using Two Sets of Parametric Relations. 16th Iranian Geophysics Conference, Tehran, Iran, 13-15 May 2014.

- Gharaylou, M.**, Pegahfar, N.,** Bidokhti, A.A., 2014, Idealized Simulation of Intra-Cloud Lightning, 15th Fluid Dynamics Conference. Hormozgan University**,** Bandar-Abbas, 17-19 Dec. 2014.

- **Pegahfar, N.,** Bidokhti, A.A. , Gharaylou, M., Rezazadeh, M., 2012, Study of Selected Dust Storms in 2000-2009 Duration (Case Study: 14-17 September 2008 Dust Event), 16th Nov. 2012, National Conference of Flow and Air Pollution, Institute of water, University of Tehran.

- **Pegahfar, N.,** Bidokhti, A.A. , P, Zawar-Reza , 2012, Parameterization of Surface Ozone Concentration Based on Stable Height and Mixing Height of Boundary Layer,15th Geophysics Conference, 1391 (Persian Calendar).

- Farahani, M., **Pegahfar, N.,** Gharaylou, M., 2012, Application of Various Typical Interpolation Methods to fill Total Ozone Gap, 15th Geophysics Conference**,** 1391 (Persian Calendar).

- **Pegahfar, N.,** Bidokhti, A.A. , P, Zawar-Reza, 2010, Study of Similarity Relations Using Local Scaling Approach in Urban Area with Complex Topography,14th Geophysics Conference, 1389 (Persian Calendar).

- **Pegahfar, N.,** Bidokhti, A.A. , P, Zawar-Reza., 2008, Influence Of Diurnal Cycle Of Mesoscale Flow On Tehran Air Pollution, The Second Disaster Management Conference, Tehran, Iran, 23 December 2007.

- **Pegahfar, N.,** Ahmadi, F., 2003, Study of Tropopause Folding in Atmospheric Systems over Iran from Potential Vorticity Viewpoint in November 2003, 11th Iranian Geophysical Conference. Tehran, Iran.

Projects

Research Projects

- Synoptic and Dynamical Analysis of Haiyan Tropical Cyclone, 2015, Project Managers: **Pegahfar, N.,** Supported by Iranian National Institute for Oceanography and Atmospheric Science.

- Analysis of Synoptic and Dynamic Structure of Heavy Snow Fall over Northern Coast of Iran During Feb. 2014, 2015 Project Managers: Ghafarian, P., Co-Worker: **Pegahfar, N.,** Supported by Iranian National Institute for Oceanography and Atmospheric Science.

- Investigation on New Methods for Cloud Seeding, 2014, Project Managers: Bidokhti, A.A., Co-Workers:

Pegahfar, N., Gharaylou, M., Supported by Institute of Water Research, National Center of Research on Cloud Seeding (IRAN, City of Yazd).

- Electrical Charge Transfer Modeling (Lightning) in Cloud and Its Implementation in a One-Dimensional Cloud Model, 2013, Project Managers: Gharaylou, M., Co-Workers: **Pegahfar, N.,** Supported by University of Tehran/Institute of Geophysics/ Space Physics group/ Meteorology department/.

- Statistical Study of Dust Storms for Tehran and Kermanshah to Reveal Dust Storm Sources (Using Surface Measured Data and Data Measured by MODIS and CALLIPSO), 2012, Project Managers: Bidokhti, A.A., Co-Workers: **Pegahfar, N.,** Gharaylou, M., Rezazadeh, M., Irannejad, P., Supported by University of Tehran/Institute of Geophysics/ Space Physics group/ Meteorology department/.

- Application of Wavelet Theory and Time Series in Filling Gaps of Total Ozone Data (Surface Measured Data and Data Measured by TOMS Satellite), 2011, Project Managers: Farahani, M.M., Co-Workers: **Pegahfar, N.,** Gharaylou, M., Supported by University of Tehran/Institute of Geophysics/ Space Physics group/ Meteorology department/.

Current Research Projects

- Installation and Preparation of a 3D Research Model for Tropical Cyclone and Implementation for a Case Study. Project Managers: **Pegahfar, N.,** Supported by Iranian National Institute for Oceanography and Atmospheric Science.

- Modeling of Ventilation Index in A Tropical Cyclone with the Simulation for A Case Study, Project Managers: **Pegahfar, N.,** Supported by Iranian National Institute for Oceanography and Atmospheric Science.

- Preparing a 1D Warm Cloud Model and Coupling with A Pollution Scheme, to Investigate Effect of Aerosol on Precipitation, Project Managers: Gharaylou, M., Co-Workers: **Pegahfar, N.,** Supported by University of Tehran/Institute of Geophysics/ Space Physics group/ Meteorology department/

- Improve a 1D Warm Cloud Model to Cold Model. Project Managers: Gharaylou, M., Co-Workers: **Pegahfar, N.,** Supported by University of Tehran/Institute of Geophysics/ Space Physics group/ Meteorology department/

- Sensitivity of WRF Cloud Microphysics Schemes (Including Single and Two Moment Schemes) in Simulation of a Severe Thunderstorm Event Over Tehran. Project Managers: Gharaylou, M., Co-workers: **Pegahfar, N**..

Workshop

- **Thermodynamically and dynamically Global Instability Indices for Storm**, 2015, 29 Feb. Tehran, Iran, INIOAS