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Dr. Khalid Mahmood

Co-PI Remote Sensing, GIS and Climatic Research Lab
National Center for GIS and Space Applications, PU, Pakistan

PROFESSIONAL EXPERIENCE:

October 2013 to date:

Assistant Professor at the department of Space Science, University of the Punjab, Lahore, Pakistan.

April 2009 to October 2013:

Lecturer at the department of Space Science, University of the Punjab, Lahore, Pakistan.

March 2013 to date:

Visiting Faculty at the Department of Geography, University of the Punjab, Lahore, Pakistan.

RESEARCH PROJECTS:

- **Principal Investigator** from Pakistan side for an international collaboration and exchange program project entitled “Development of satellite based environmental indices with proper spatial analysis for dumped MSW monitoring: perspective of varying geographical conditions” funded by Pak-Turk Researchers’ Mobility grant program.
- **Co-principal Investigator** Remote Sensing, GIS and Climatic Research Lab, National Center for GIS and Space Applications.
- **Principal Investigator** for the project entitled “MSW open dumps hazards monitoring using Satellite Remote Sensing (SRS) and Geographic Information System (GIS) techniques” funded by University of the Punjab, Lahore, Pakistan.

AWARDS:

- **Productive Scientist of Pakistan 2016**, declared by Pakistan Council for Science and Technology.
- **Ph.D. course work** has been completed with highest CGPA, ever in the history of the department.
- **Young Productive Scientist of Pakistan** 2016, declared by Pakistan Council for Science and Technology.
- **Productive Scientist of Pakistan** 2015 declared by Pakistan Council for Science and Technology.
- **Young Productive Scientist of Pakistan** 2015 declared by Pakistan Council for Science and Technology.
- **1st position** in M.Phil. Space Science, session 2010-12.
- **Academic distinction** in B.S. Space Science
- Awarded with **merit scholarship** in B.S. Space Science for three consecutive years
- Awarded with **merit scholarship** in M.Phil. Space Science.

RESEARCH PUBLICATIONS:

- **Mahmood K.**, Batool R., 2020. Comparison of stochastic and traditional water quality indices for mapping groundwater quality zones. Environmental Earth Sciences (I.F. 2.18), 79: 405.
- **Mahmood K.**, Qaiser A., Farooq S., Nisa M., 2020. RS- and GIS-based modeling for optimum site selection in rain water harvesting system: an SCS-CN approach. Acta Geophysica (I.F. 1.395), 68:1175-1185. (https://doi.org/10.1007/s11600-020-00460-x)
- **Mahmood K.**, Ul-Haq Z., Faizi F., Tariq S., Muhammad A.N., Rana A.D., 2019. Monitoring open dumping of municipal waste in Gujranwala, Pakistan using a combination of satellite based bio-indicators and GIS analysis. Ecological Indicators (I.F. 4.490), 107, 105613.
- Parvez, S., Rana, A.D., Ul-Haq, Z., Batool, S.A., Ali, M., **Mahmood, K.** Tariq, S., Bano, S., 2019. Investigating contributions of gases, meteorological parameters, and aerosols towards tropospheric ozone variabilities over megacity Lahore (Pakistan). Applied Ecology and Environmental Research (I.F. 0.721), 17(6):13533-13553.

- Rana, A.D., Parvez, S., Ul-Haq, Z., Batool, S.A., Chaudhary, M.N., **Mahmood, K.** Tariq, S., 2019. Anthropogenic, biogenic and pyrogenic emission sources and atmospheric formaldehyde (HCHO) and nitrogen dioxide (NO2) columns over different landuse/landcovers of south Asia. Applied Ecology and Environmental Research (I.F. 0.721), 17(5):10989-11015.
- **Mahmood K.**, Ul-Haq Z., Faizi F., Batool S. A., 2019. A Comparison of Satellite Based Indices for Hazard Assessment of MSW Open Dumps Using Spatial Analysis. Waste Management & Research (I.F. 2.015), 37(3): 219-236.
- Batool, R., **Mahmood, K.**, Ahmad, S. R., Naeem, M. A., 2019. Geographic Scenario of Drinking Water Quality of Lahore Metropolitan, Pakistan, In Response to Urbanization and Water Demand: A GIS Perspective. Applied Ecology and Environmental Research (I.F. 0.721), 17(2):3973-3988.
- Ul-Haq Z., Batool S. A., Tariq S., Rana A. D., **Mahmood K.,** Chaudhary M. N., Naeem, M. A., 2018. Temporal and spatial variations of NO_2 over Saudi Arabia and identification of major hotspot area during 2005-2014 using satellite data. Applied Ecolology and Enviromental Research (I.F. 0.721), 16 (5): 5757-5770.
- **Mahmood K.**, Faizi F., 2018. Groundwater Scarcity Footprint (GSF): A GIS based methodology to assess seasonal and annual fluctuations of scarcity level. 10th Eastern European Young Water Professional Conference: New Technologies in Water Sector, 85-93, May 2018, Zagreb, Croatia.
- Tariq S., Ul-Haq Z., **Mahmood K.**, Rana A. D., 2018. Spatio-temporal distributions and trends of aerosol parameters over Pakistan using remote sensing. Applied Ecology and Environmental Research 16(3):2615-2637.
- Ul-haq Z., Rana A.D., Tariq S., **Mahmood K.**, Ali M., Bashir, I., 2018. Modeling of tropospheric NO2 column over different climatic zones and land use/land cover types in South Asia. Journal of Atmospheric and Solar-Terrestrial Physics 168, 80–99.
- **Mahmood K**., Batool S.A, Faizi F., Chauhdhery M.N., Ul-Haq Z., Rana A.D., Tariq S., 2017. Bio-thermal effects of open dumps on surroundings detected by remote sensing - influence of geographical conditions. Ecological Indicators (I.F. 3.898), 82: 131-142.
- **Mahmood K**., Batool S.A, Chauhdhery M.N., Ul-Haq Z., 2017. Ranking criteria for assessment of municipal solid waste dumping sites. Archives of Environmental Protection (I.F. 0.919), 43 (1): 97-107.

- Tariq S., Ul-Haq, Z., Imran A., Mehmood U., Aslam M., **Mahmood K**., 2017. Co2 emissions from Pakistan and India and their relationship with economic variables. Applied Ecology and Environmental Research, 15 (4):1301-1312
- Ul-haq Z., Tariq S., Ali M., Rana A.D., **Mahmood K.**, 2017. Satellite sensed tropospheric NO2 patterns and anomalies over Indus, Ganges, Brahmaputra and Meghna river basins. International Journal of Remote Sensing (I.F. 1.640), 38 (5): 1423-1450
- **Mahmood K**., Muhammad A., 2017. Appraisal of Drinking Water Quality in Lahore Residence, Pakistan. Pakistan journal of scientific and industrial research Series-A: physical sciences, 60(1): 34-41.
- **Mahmood K**., Tariq F., 2017. Temporal GIS to assess nature of groundwater contamination sources and importance of local recharge in Lahore metropolitan, Pakistan. 9th Eastern European Young Water Professionals Conference, 24-27 May, 2017, Budapest, Hungary.
- **Mahmood K**., Batool S.A, Chauhdhery M.N., 2016. Studying bio-thermal effects at and around MSW dumps using Satellite Remote Sensing and GIS. Waste Management (I.F. 4.01), 55: 118-128.
- **Mahmood K**., Ul-Haq Z., Batool S.A., Rana A.D., Tariq S. 2016. Application of Temporal GIS to Track Areas of Significant Concern Regarding Groundwater Contamination. Environmental Earth Sciences (I.F. 1.765), 75:33.
- Ul-Haq Z., Tariq S., Ali M., **Mahmood K.**, Rana A.D., 2016. Sulphur dioxide loadings over megacity Lahore (Pakistan) and adjoining region of Indo-Gangetic Basin. International Journal of Remote Sensing (I.F. 1.640), 37 (13): 3021-3041.
- Khan M.S., Qadir A., Javed A., **Mahmood K.,** Amjad M.R., Shehzad S., 2016. Assessment of aquifer intrinsic vulnerability using GIS based Drastic model in Sialkot area, Pakistan. International Journal of Economics and Environment Geology, 7(1): 73-84.
- **Mahmood K.,** Batool S.A., Chauhdhery M.N., Daud A, 2015. Evaluating municipal solid waste dump using geographic information system. Polish Journal of Environmental Studies (I.F. 0.896), 24(2): 879-886.
- Batool R., **Mahmood K.,** Qimrah H., Basit I., Rubab S., 2015. Selection of the optimal interpolation method for groundwater quality. Proceedings of the Fourth International Conference on Aerospace Science and Engineering: 325-333.

- **Mahmood K.**, Khan R.M., Ashfaq A., Ahsan H., Shakoor Z., Tanveer T., 2015. Assessment of the Intrinsic Vulnerability to Groundwater Contamination in Lahore, Pakistan. Pakistan journal of Scientific and Industrial Research, 58 (1): 8-16.
- Ul-Haq Z., Rana A.D., Ali M., **Mahmood K.**, Tariq S., Qayyum Z., 2015. Carbon monoxide (CO) emissions and its tropospheric variability over Pakistan using satellite-sensed data. Advances in Space Research (I.F. 1.409), 56 (4): 583-595.
- Ul-Haq Z., Tariq S., Rana A.D., Ali M., **Mahmood K.**, Shahid P., 2015. Satellite remote sensing of total ozone column (TOC) over Pakistan and neighboring regions, International Journal of Remote Sensing (I.F. 1.652), 36 (4):1038-1054.
- Kanwal S., Gabriel H. F., **Mahmood K.**, Ali R., Haidar A., Tehseen T. 2015. Lahore's Groundwater Depletion-A Review of the Aquifer Susceptibility to Degradation and its Consequences. Technical Journal, University of Engineering and Technology (UET) Taxila, Pakistan 20(1): 26-38.
- Batool R., **Mahmood K.**, Qimrah H., Basit I., Rubab S., 2015. Selection of the optimal interpolation method fpr groundwater quality. Fourth International Conference on Aerospace Science & Engineering (ICASE 2015): 325-333.
- Ul-Haq Z., Tariq S., Ali M., **Mahmood K.**, Batool S., Rana A.D., 2014. A study of tropospheric NO_2 variability over Pakistan using OMI data. Atmospheric Pollution Research (I.F. 1.371), 5(4):709-720.
- **Mahmood K.**, S. Kanwal, S.R. Ali, A.H. Ali, T. Tahsin, 2014. “Selection of interpolation for Groundwater observations in Lahore, Pakistan. Pakistan journal of Scientific and Industrial Research, 57 (3): 154-166.
- Ali M., Tariq S., **Mahmood K.**, Daud A., Batool A., Ul-Haq Z. 2014. A Study of Aerosol Properties over Lahore (Pakistan) by Using AERONET Data. Asia-Pacific Journal of Atmospheric Sciences (I.F. 1.347), 49 (5), 1-10.
- **Mahmood K.**, Batool S.A., Rana A.D., Tariq S., Ali Z. and Chaudhry M.N., 2013. Assessment of leachate effects to the drinking water supply units in the down slope regions of municipal solid waste (MSW) dumping sites in Lahore Pakistan. International Journal of Physical Sciences (I.F. 0.54), 8 (28), 1470-1480.
- **Mahmood K.**, A.D. Rana, S. Tariq, S. Kanwal, S.R. Ali, A.H. Ali, T. Tahsin, 2013. “Groundwater Levels Susceptibility to Degradation in Lahore Metropolitan”. Science International, 25:123-126.

- Ali S.A., Akhtar T., **Mahmood K.**, Safi W.A., 2013. Spatial distribution of ANCYLOSTOMIASIS in soil of slums of northern Lahore. IOSR Journal of Agriculture and Veterinary Science, 4 (1), 20-25.
- Tariq S., Batool A., Rana A.D., **Mahmood K.,** Batool M., Murtaza I., Hashim A., 2013. Variability of Size Distribution, Refrective Index and Asymmetry Parameter of Aerosols over Lahore Derived from Aeronet. Science International, 25:137-139.

RESEARCH INTERESTS:

Remote Sensing and Geo-information systems for environmental hazard assessment and spatial patterns identification of environmental variables, groundwater assessment, MSW dumping hazards assessment, atmospheric pollution, rainwater harvesting, vegetation health, urban heat island effect, feasible site selection of public facilities, forestry, climate change and its effects, satellite based environmental indices etc.