

# Firdos Khan

Associate Professor

School of Natural Sciences

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## About

Dr. Firdos Khan is working as Associate Professor in the School of Natural Sciences. Dr. Firdos Khan has a PhD in Statistics. Dr. Firdos Khan has published 40 research articles & conference papers having a citation count of 817, carried out 0 projects and filed 0 intellectual property.

## Qualifications

<b>PhD in Statistics</b> Universität Klagenfurt , Austria	2013 - 2017
<b>MPhil in Statistics</b> Quaid-i-Azam University , Pakistan	2005 - 2007
<b>MSc in Statistics</b> University of Peshawar , Pakistan	2001 - 2003
<b>BSc in Mathematics</b> University of Peshawar , Pakistan	1999 - 2001

## Experience

<b>Associate Professor</b> School of Natural Sciences	2025- Present
<b>Assistant Professor</b> School of Natural Sciences	2024 - 2024
<b>Assistant Professor</b> School of Natural Sciences	2023 - 2024
<b>Assistant Professor</b> School of Natural Sciences	2019 - 2019
<b>Assistant Professor</b> School of Natural Sciences	2019 - 2023
<b>Assistant Professor</b> International Islamic University, Islamabad , H-10 Sector, Islamabad	2018 - 2019
<b>Scientific Officer (SPS-08)</b> Global Change Impact Studies Centre (GCISC) , Emigration Tower, G-8/1 Islamabad	2008 - 2013

## Awards

<b>YSSP</b> It was a research program for three months and application were called form around the globe. I got selected and complete my project and awarded by a certificate.	2012
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## Research Articles

<b>Unveiling divergent crop signals in the face of climate variability and ensemble climate projections using CMIP6 data in the South-West of Pakistan</b> <i>Beenish Javed Firdos Khan Muhammad Abbas Shaukat Ali</i> <i>Stochastic Environmental Research and Risk Assessment</i> <b>Impact Factor:</b> 3.600   <b>Quartile:</b> 1 <b>DOI:</b> <a href="https://doi.org/10.1007/s00477-025-03056-3">https://doi.org/10.1007/s00477-025-03056-3</a>	2025
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- Enhancing Drought Risk Assessment in the Punjab, Pakistan: A Copula-Based Modeling Approach for Future Projections** 2024  
*Muhammad Akram Firdos Khan Hamd Ullah Shaukat Ali Azfar Hussain*  
*Journal of Applied Meteorology and Climatology*, Volume 63, Issue 10, Pages 1207–1225  
**Impact Factor:** 2.600 | **Quartile:** 3 | **Citations:** 1  
**DOI:** DOI: 10.1175/JAMC-D-24-0041.1
- Association of precipitation extremes and crops production and projecting future extremes using machine learning approaches with CMIP6 data** 2024  
*Firdos Khan Gunter Spöck Yuei-An Liou Shaukat Ali*  
*Environmental Sciences and Pollution Research*, Volume:31, Issue:42, Page:54979-54999.  
**Impact Factor:** N/A  
**DOI:** <https://doi.org/10.1007/s11356-024-34652-5>
- Assessing the impacts of temperature extremes on agriculture yield and projecting future extremes using machine learning and deep learning approaches with CMIP6 data** 2024  
*Firdos Khan Yuei-An Liou Gunter Spöck Xue Wang Shaukat Ali*  
*International Journal of Applied Earth Observation and Geoinformation*, Volume 132, Article Number 104071  
**Impact Factor:** 7.600 | **Quartile:** 1 | **Citations:** 6  
**DOI:** <https://doi.org/10.1016/j.jag.2024.104071>
- Modeling and Monitoring CO2 Emissions in G20 Countries: A Comparative Analysis of Multiple Statistical Models** 2024  
*Anwar Hussain Firdos Khan Olayan Albalawi*  
*Sustainability*, Volume 16(14), Article Number 6114  
**Impact Factor:** 3.300 | **Quartile:** 2 | **Citations:** 10  
**DOI:** <https://doi.org/10.3390/su16146114>
- Analysing spatiotemporal drought patterns in Punjab Province, Pakistan, utilizing SPI and SPEI** 2024  
*Anwar Hussain Muhammad Suliman Firdos Khan*  
*Theoretical and Applied Climatology*, Pages 1-21  
**Impact Factor:** 2.800 | **Quartile:** 3 | **Citations:** 2  
**DOI:** <https://doi.org/10.1007/s00704-024-05090-7>
- Assessment of the impacts of climate change on the construction of homogeneous climatic regions and ensemble climate projections using CMIP6 data over Pakistan** 2024  
*Muhammad Abbas Firdos Khan Yuei-An Liou Hamd Ullah Beenish Javed Shaukat Ali*  
*Atmospheric Research*, Volume: 304, Article Number: 107359  
**Impact Factor:** 5.5 | **Quartile:** 1 | **Citations:** 9  
**DOI:** 10.1016/j.atmosres.2024.107359
- Enhanced climate projections over Sindh, Pakistan: a bayesian model averaging ensemble methodology** 2024  
*Aatka Irfan Firdos Khan Muhammad Abbas Shaukat Ali*  
*Modeling Earth Systems and Environment*, Volume: 10, Pages 4401–4413  
**Impact Factor:** 2.700 | **Quartile:** 3 | **Citations:** 3  
**DOI:** 10.1007/s40808-024-02028-w
- A 5-km gridded product development of daily temperature and precipitation for Bangladesh, Nepal, and Pakistan from 1981 to 2016** 2023  
*Shaukat Ali Zulfiqar A. Bhutta Michelle S. Reboita Muhammad Arif Goheer Shiva Ebrahimi Jose Roberto Rozante Rida S. Kiani Sher Muhammad Firdos Khan Md Mizanur Rahman Madan L. Shreshtha Li Dan*  
*Geoscience Data Journal*, Pages 1-11  
**Impact Factor:** 3.2 | **Quartile:** 2 | **Citations:** 5  
**DOI:** <https://doi.org/10.1002/gdj3.217>
- Development of high resolution daily gridded precipitation and temperature dataset for potohar plateau of indus basin** 2023  
*Muhammad Wasif Khan Shakil Ahmad Zakir Hussain Dahri Zain Syed Khalil Ahmad Firdos Khan Muhammad Azmat*  
*Theoretical and Applied Climatology*, Volume 154, pages 1179–1201  
**Impact Factor:** 3.4 | **Quartile:** 2 | **Citations:** 7  
**DOI:** <https://doi.org/10.1007/s00704-023-04626-7>
- Assessment of precipitation extremes and their association with NDVI, monsoon and oceanic indices over Pakistan** 2023

Azfar Hussain Ishtiaq Hussain Shaukat Ali Waheed Ullah Firdos Khan Abolfazl Rezaei Safi Ullah Haider Abbas Asima Manzoom Jianhua Cao Jinxing Zhou  
*Atmospheric Research*, Volume 292, Article Number: 106873

**Impact Factor:** 5.5 | **Quartile:** 1 | **Citations:** 29

**DOI:** 10.1016/j.atmosres.2023.106873

**Assessment of climate change impacts on the construction of homogeneous climate zones and climate projections during the twenty first century over Pakistan**

2023

Talha Farooq Firdos Khan Hamd Ullah Zahid-ur- Rehman Anum Luni  
*Stochastic Environmental Research and Risk Assessment*, Pages 1-25

**Impact Factor:** 3.821 | **Quartile:** 1 | **Citations:** 5

**DOI:** <https://doi.org/10.1007/s00477-023-02491-4>

**Spatiotemporal temperature trends over homogenous climatic regions of Pakistan during 1961–2017**

2023

Azhar Hussain Ishtiaq Hussain Shaukat Ali Waheed Ullah Firdos Khan Safi Ullah Haider Abbas Asima Manzoom Jianhua Cao Jinxing Zhou  
*Theoretical and Applied Climatology*, Pages 1-19

**Impact Factor:** 3.410 | **Quartile:** 3 | **Citations:** 23

**DOI:** <https://doi.org/10.1007/s00704-023-04484-3>

**Twenty-first century climate extremes' projections and their spatio-temporal trend analysis over Pakistan**

2023

Firdos Khan Shaukat Ali Hamd Ullah Sher Muhammad  
*Journal of Hydrology-Regional Studies*, Volume 45, Article Number 101295

**Impact Factor:** 5.437 | **Quartile:** 1 | **Citations:** 19

**DOI:** <https://doi.org/10.1016/j.ejrh.2022.101295>

**Performance evaluation of Standardized Copula-based Drought Index with Reconnaissance Drought Index and Standardized Precipitation Temperature Index using severity–duration frequency curves over Balochistan, Pakistan**

2022

Hamd Ullah Muhammad Akbar Firdos Khan Muhammad Amjad  
*International Journal of Climatology*, Pages 1-16

**Impact Factor:** 3.651 | **Quartile:** 2 | **Citations:** 4

**DOI:** 10.1002/joc.7985

**Modelling the impact of climate change on dengue outbreaks and future spatiotemporal shift in Pakistan**

2022

Alia Saeed Shaukat Ali Firdos Khan Sher Muhammad Michelle Simões Reboita Abdul Wali Khan Muhammad Arif Goheer Mumtaz Ali Khan Ramesh Kumar  
Aamer Ikram Aliya Jabeen Sathirakorn Pongpanich  
*Environmental Geochemistry and Health*, Pages 1-17

**Impact Factor:** 4.898 | **Quartile:** 1 | **Citations:** 11

**DOI:** <https://doi.org/10.1007/s10653-022-01429-z>

**The Karakoram Anomaly: Validation through Remote Sensing Data, Prospects and Implications**

2022

Haleema Attaullah Asif Khan Mujahid Khan Firdos Khan Shaukat Ali Tabinda Masud Muhammad Shahid Iqbal  
*Water*, Volume 14(19), Article Number 3157

**Impact Factor:** 3.530 | **Quartile:** 2 | **Citations:** 3

**DOI:** <https://doi.org/10.3390/w14193157>

**Water availability and response of Tarbela Reservoir under the changing climate in the Upper Indus Basin, Pakistan**

2022

Firdos Khan  
*Scientific Reports*, Volume 12, Issue 1, Article Number 15865

**Impact Factor:** 4.996 | **Quartile:** 2 | **Citations:** 15

**DOI:** <https://doi.org/10.1038/s41598-022-20159-x>

**A multi-scalar statistical approach to develop Standardized Copula-based Drought Index (SCDI) for drought risk analysis**

2022

Hamd Ullah Muhammad Akbar Firdos Khan Muhammad Amjad  
*International Journal of Environmental Science and Technology*, Vol:20, Pages7861-7876

**Impact Factor:** 3.519 | **Quartile:** 3 | **Citations:** 1

**DOI:** <https://doi.org/10.1007/s13762-022-04411-5>

**Climate change and spatio-temporal trend analysis of climate extremes in the homogeneous climatic zones of Pakistan during 1962-2019**

2022

Firdos Khan Shaukat Ali Hamd Ullah Sher Muhammad Christoph Mayer  
*PLoS ONE*, Volume 17, Issue 7, Article Number e0271626

- Impact Factor:** 3.752 | **Quartile:** 2 | **Citations:** 36  
**DOI:** <https://doi.org/10.1371/journal.pone.0271626>
- Hydrological projections over the Upper Indus Basin at 1.5 °C and 2.0 °C temperature increase** 2021  
*Rida Sehar Kiani Shaukat Ali Moetasim Ashfaq Firdos Khan Sher Muhammad Michelle S. Reboita Abida Farooqi*  
*Science of the Total Environment*, Volume 788, Article Number 147759  
**Impact Factor:** 10.753 | **Quartile:** 1 | **Citations:** 29  
**DOI:** <https://doi.org/10.1016/j.scitotenv.2021.147759>
- Short-term forecasting of daily infections, fatalities and recoveries about COVID-19 in Algeria using statistical models** 2021  
*Mohamed Lounis Firdos Khan*  
*Beni-Suef University Journal of Basic and Applied Sciences*, Volume 10(1), Article Number 46  
**Impact Factor:** N/A | **Citations:** 3  
**DOI:** [10.1186/s43088-021-00136-5](https://doi.org/10.1186/s43088-021-00136-5)
- Forecasting daily new infections, deaths and recovery cases due to COVID-19 in Pakistan by using Bayesian Dynamic Linear Models** 2021  
*Firdos Khan Shaukat Ali Alia Saeed Ramesh Kumar Abdul Wali Khan*  
*PLoS ONE*, Volume 16(6), Article Number e0253367  
**Impact Factor:** 3.752 | **Quartile:** 2 | **Citations:** 11  
**DOI:** <https://doi.org/10.1371/journal.pone.0253367>
- Evaluation of CMIP5 models and ensemble climate projections using a Bayesian approach: a case study of the Upper Indus Basin, Pakistan** 2021  
*Firdos Khan Jurgen Pilz Shaukat Ali*  
*Environmental and Ecological Statistics*, Pages 1-22  
**Impact Factor:** 2.365 | **Quartile:** 1 | **Citations:** 21  
**DOI:** <https://doi.org/10.1007/s10651-021-00490-8>
- Future climatic changes, extreme events, related uncertainties, and policy recommendations in the Hindu Kush sub-regions of Pakistan** 2021  
*Shaukat Ali Alia Saeed Rida Sehar Kiani Sher Muhammad Firdos Khan Romaisa Babar Asif Khan Muhammad Shahid Iqbal Muhammad Arif Goheer Wajid Naseem Shah Fahad*  
*Theoretical and Applied Climatology*, Volume 143, Pages 193-209  
**Impact Factor:** 3.410 | **Quartile:** 3 | **Citations:** 11  
**DOI:** <https://doi.org/10.1007/s00704-020-03399-7>
- Modelling and forecasting of new cases, deaths and recover cases of COVID-19 by using Vector Autoregressive model in Pakistan** 2020  
*Firdos Khan Alia Saeed Shaukat Ali*  
*Chaos Solitons & Fractals*, Volume 140, Article Number 110189  
**Impact Factor:** 5.944 | **Quartile:** 1 | **Citations:** 54  
**DOI:** <https://doi.org/10.1016/j.chaos.2020.110189>
- Assessment of drought and wet projections in the humid climatic regions for Pakistan** 2020  
*Hamd Ullah Muhammad Akbar Firdos Khan*  
*Stochastic Environmental Research and Risk Assessment*, Pages 1-14  
**Impact Factor:** 3.379 | **Quartile:** 2 | **Citations:** 11  
**DOI:** <https://doi.org/10.1007/s00477-020-01879-w>
- Identifying hotspots cities vulnerable to climate change in Pakistan under CMIP5 climate projections** 2020  
*Shaukat Ali Rida S. Kiani Michelle S. Reboita Li Dan Hyung-II Eum Jaepil Cho Firdos Khan Madan L. Shreshtha K. Dairaku*  
*International Journal of Climatology*, Pages 1-23  
**Impact Factor:** 4.069 | **Quartile:** 2 | **Citations:** 33  
**DOI:** <https://doi.org/10.1002/joc.6638>
- Droughts' projections in homogeneous climatic regions using Standardized Precipitation Index in Pakistan** 2020  
*Hamd Ullah Muhammad Akbar Firdos Khan*  
*Theoretical and Applied Climatology*, Volume 140, Pages 787–803  
**Impact Factor:** 3.179 | **Quartile:** 2 | **Citations:** 22  
**DOI:** <https://doi.org/10.1007/s00704-020-03109-3>
- Variability and Predictability of Summer Monsoon Rainfall over Pakistan** 2020  
*Muhammad Adnan Firdos Khan Nadia Rehman Shaukat Ali Sher Shah Hasan Muhammad Mubashar Dogar Shahbaz Mehmood Shabehul Hasoon*

**Impact Factor:** 2.100 | **Quartile:** 3 | **Citations:** 16

**DOI:** <https://doi.org/10.1007/s13143-020-00178-2>

**A novel approach for modelling pattern and spatial dependence structures between climate variables by combining mixture models with copula models** 2019

*Firdos Khan Jürgen Pilz Gunter Spöck*

*International Journal of Climatology*, Volume 40, Issue 2, Pages 1049-1066

**Impact Factor:** 3.928 | **Quartile:** 1 | **Citations:** 13

**DOI:** 10.1002/joc.6255

**Assessment of climate extremes in future projections downscaled by multiple statistical downscaling methods over Pakistan** 2019

*Shaukat Ali Hyung-Il Eum Jaepil Cho Li Dan Firdos Khan K. Dairaku Madan Lall Shrestha Syewoon Hwang Wajid Nasim Imtia Ali Khan Shah Fahad*

*Atmospheric Research*, Volume 222, Pages 114-133

**Impact Factor:** 4.676 | **Quartile:** 1 | **Citations:** 134

**DOI:** 10.1016/j.atmosres.2019.02.009

**Construction of homogeneous climatic regions by combining cluster analysis and L-moment approach on the basis of Reconnaissance Drought Index for Pakistan** 2019

*Hamd Ullah Muhammad Akbar Firdos Khan*

*International Journal of Climatology*, -

**Impact Factor:** 3.928 | **Quartile:** 1 | **Citations:** 37

**DOI:** 10.1002/joc.6214

**Evaluation of statistical downscaling models using pattern and dependence structure in the monsoon-dominated region of Pakistan** 2018

*Firdos Khan Shaukat Ali Jürgen Pilz*

*Weather*, Volume 73, Issue 6, Pages 193-203

**Impact Factor:** 1.143 | **Quartile:** 4 | **Citations:** 9

**DOI:** 10.1002/wea.3164

**Metallogenic efficiency from deposit to region—A case study in western Zhejiang Province, southeastern China** 2017

*Bo Zhao Ling Han Jürgen Pilz Jianjian Wu Firdos Khan Dehui Zhang*

*Ore Geology Reviews*, Volume 86, Pages 957-970

**Impact Factor:** 3.993 | **Quartile:** 1 | **Citations:** 10

**DOI:** 10.1016/j.oregeorev.2016.10.003

**Improved Hydrological Projections and Reservoir Management in the Upper Indus Basin under the Changing Climate** 2017

*Firdos Khan Jürgen Pilz Shaukat Ali Jürgen Pilz Shaukat Ali*

*Water and Environment Journal*, Volume: 31 Issue: 2 Pages: 235-244

**Impact Factor:** 1.224 | **Quartile:** 3 | **Citations:** 21

**DOI:** 10.1111/wej.12237

**Climate variability and its impacts on water resources in the Upper Indus Basin under IPCC climate change scenarios** 2015

*Firdos Khan Jürgen Pilz Shaukat Ali David A. Weiberg*

*International Journal of Global Warming*, Volume: 8 Issue: 1 Pages: 46-69

**Impact Factor:** 1.286 | **Quartile:** 3 | **Citations:** 37

**DOI:** 10.1504/IJGW.2015.071583

**Evaluation of weather research and forecasting model for the assessment of wind resource over Gharo, Pakistan** 2015

*Muhammad Amjad Qudisia Zafar Firdos Khan Muhammad Munir Sheikh*

*International Journal of Climatology*, Volume 35, Issue 8, Pages 1821-1832

**Impact Factor:** 3.609 | **Quartile:** 1 | **Citations:** 25

**DOI:** 10.1002/joc.4089

**Twenty first century climatic and hydrological changes over Upper Indus Basin of Himalayan region of Pakistan** 2015

*Shaukat Ali Li Dan Congbin Fu Firdos Khan*

*Environmental Research Letters*, Volume 10, Issue, 1 Article Number 014007

**Impact Factor:** 4.134 | **Quartile:** 1 | **Citations:** 130

## Editorial Activities

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<b>International Journal of Climatology</b> Reviewed Papers for Journals <b>Impact Factor: 2.8</b>	2025
<b>Journal of Cleaner Production</b> Reviewed Papers for Journals <b>Impact Factor: 9.7</b>	2025
<b>Science of the Total Environment</b> Reviewed Papers for Journals <b>Impact Factor: 8.2</b>	2024
<b>Journal of Hydrology</b> Reviewed Papers for Journals <b>Impact Factor: 6.4</b>	2024
<b>Science of the Total Environment</b> Reviewed Papers for Journals <b>Impact Factor: 9.8</b>	2024
<b>PLoS One</b> Reviewed Papers for Journals <b>Impact Factor: 3.75</b>	2023
<b>Discrete Dynamics in Nature and Society</b> Reviewed Papers for Journals <b>Impact Factor: 1.457</b>	2023
<b>PeerJ</b> Reviewed Papers for Journals <b>Impact Factor: 3.06</b>	2023
<b>PLoS One</b> Reviewed Papers for Journals <b>Impact Factor: 3.752</b>	2022
Reviewed Papers for Journals <b>Impact Factor: 3.24</b>	2022
Reviewed Papers for Journals <b>Impact Factor: 1.2</b>	2022
Reviewed Papers for Journals <b>Impact Factor: 2.222</b>	2022
Reviewed Papers for Journals <b>Impact Factor: 0.96</b>	2022
Reviewed Papers for Journals <b>Impact Factor: 3.998</b>	2021
Reviewed Papers for Journals <b>Impact Factor: 4.728</b>	2021
Reviewed Papers for Journals <b>Impact Factor: 3.998</b>	2021
Reviewed Papers for Journals	2020

**Impact Factor:** 1.656

2020

Reviewed Papers for Journals

**Impact Factor:** 1.847

2019

Reviewed Papers for Journals

**Impact Factor:** 2.544

2018

Reviewed Papers for Journals

**Impact Factor:** 6.192