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Muhammad Usman Munir

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ABOUT ME

I am a highly motivated and experienced hydrologist with a passion for understanding hydrological processes and their impact on the environment. I hold a Master's degree in hydrology and have several years of experience in the field of quantitative hydrology. Currently, I am working as a research associate at the University of Bayreuth, Germany. My research focus is on the impact of climate change on hydrological processes within the surface and subsurface flow. I have also experience in transport modelling. I am looking for a challenging and dynamic role where I can apply my skills and experience to contribute to the advancement of surface and sub-surface hydrology.

WORK EXPERIENCE

DEPARTMENT OF HYDROLOGY, UNIVERSITY OF BAYREUTH

RESEARCH ASSOCIATE – 01/10/2018 – 01/12/2024

WATER AND SANITATION AGENCY (WASA)

INTERNEE – 01/02/2013 – 31/05/2013

EDUCATION AND TRAINING

01/01/2019 – CURRENT

PHD IN HYDROLOGY University of Bayreuth, Germany

Final grade Thesis Submitted |

Thesis Surface-Groundwater Interactions and Climate Change Impacts: An Integrated Approach using HydroGeoSphere Model

01/09/2013 – 11/12/2015

M.SC. (HONS.) AGRICULTURAL ENGINEERING University of Agriculture,Faisalabad, Pakistan

Irrigation and Drainage (Hydrology)

Thesis Determination of Crop water requirement and water use efficiency of maize crop

01/09/2009 – 31/07/2013 Pakistan

B.SC. AGRICULTURAL ENGINEERING University of Agriculture Faisalabad

LANGUAGE SKILLS

Mother tongue(s): **URDU**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
GERMAN	A2	A2	A2	A2	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Experience in working with integrated model HydroGeoSphere (HGS) | experience in SWAT model | Good experience in spatial analysis (QGIS) | Experience in Python and R for data visualization | Transport Modelling | Process based Modelling

PUBLICATIONS

2024

Understanding the vulnerability of surface–groundwater interactions to climate change: insights from a Bavarian Forest headwater catchment

Authors: Muhammad Usman Munir, Katharina Blaurock & Sven Frei

Runoff Generation and Groundwater Interactions in a Central European Headwater Catchment: Insights from Process-Based Modeling and Radon-222 as a Natural Tracer

Under Review

Authors: Muhammad Usman Munir, Benjamin S. Gilfedder, Sven Frei

Using Physics-Informed Neural Networks to Quantify Submarine Groundwater Discharge Under High-Frequency Tidal Dynamics using Heat as a Tracer

Under review

Authors: S. Frei, M.U. Munir, J. Gleiß, A.M. Sievert and B.S. Gilfedder

2022

Munir, M. U. and Frei, S.: Impact of local climate change on groundwater resources and surface water availability in headwater catchments, EGU General Assembly 2022, Vienna, Austria, 23–27 May 2022

Abstract

CONFERENCES AND SEMINARS

23/05/2022 – 27/05/2022 Vienna, Austria

EGU 2022

Presentation in a session

13/12/2021 – 17/12/2021 New Orleans, LA

AGU 2021

Presentation in session

06/12/2021 – 10/12/2021 National Institute of Hydrology, Roorkee, India (Online)

Participated in 5-day training program on “Climate Change and Hydrological Impact Assessment” organized by National Institute of Hydrology

19/04/2021 – 30/04/2021 Vienna, Austria (Online)

EGU 2021

Presentation in session

PROJECTS

01/09/2018 – 01/09/2021

Predicting and analyzing the behavior of small catchment areas in the context of local climate change (AQUAKLIF-TP5)

Working as research associate

HONOURS AND AWARDS

01/08/2018

PhD Scholarship – DAAD/HEC Pakistan

01/12/2021

Travel Grant – American Geophysical Union (AGU)

COMMUNICATION AND INTERPERSONAL SKILLS

Excellent communication and analytical skills

Good Knowledge gained from the experience throughout my education career, Excellent communication and analytical skills, a Confident approach towards arriving at a solution, Hardworking and self-starter, Ability to learn and adapt quickly to new Techniques and methodologies as far as possible, Optimistic in approach, and belief in teamwork.