Md Jamal Uddin Khan

Curriculum Vitae

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La rochelle - 17000, France
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Education

2007 **Secondary School Certificate Exam**, *Habiganj Govt. High School*, Sylhet Board, Bangladesh.

2009 **Higher Secondary Certificate Exam**, *Jalalabad Cantonment Public School and College*, Sylhet Board, Bangladesh.

2010-2015 **B.Sc in Civil Engineering**, *Bangladesh University of Engineering and Technology (BUET), Bangladesh*.

2015-2017 **M.Sc in Civil and Structural Engineering**, *Bangladesh University of Engineering and Technology (BUET), Bangladesh*.

2018-2021 **PhD**, *Océan, Atmosphère, Climat*, Université Toulouse 3 - Paul Sabatier, France, Defended on 16th February, 2021.

Interests

- Environmental Extremes
- Tide
- Numerical Modelling
- Hydrodynamics
- Storm Surge
- Spaceborne Technologies

Research Experience

Mar. 2021 – Ongoing **PostDoc**, *La Rochelle University*, LIttoral ENvironnement Et Sociétés, Centre national de la recherche scientifique.
Working on the historic sea-level record in Saint-Jean-de-Luz, particularly looking at the historic water-level extremes.

Mar. 2018 – Feb. 2021 **PhD Student**, *Universite Toulouse III - Paul Sabatier*, Laboratoire d'Etudes en Geophysique et Oceanographie Spatiales, Centre national de la recherche scientifique.
Worked under supervision of Dr. Fabien Durand and Dr. Laurent Testut to understand the mechanisms of coastal flooding during extreme events under current climate as well as the future. The work was jointly funded by CNES and Embassy of France in Dhaka.

Dec. 2015 – Feb. 2018 **Research Assistant**, *Climate Modeling and Simulation Lab*, IWFM, BUET.
Worked with climate model outputs, atmospheric modeling, hydrologic modeling, and analysis of large dataset.

June 2016 – October 2016 **Research Associate**, *CIMMYT-Bangladesh*, Dhaka, Bangladesh.
Worked on the development of wheat blast model based on meteorological factors.

Training

2020 **pyGOAT python toolbox**, *LIENSs*, La Rochelle University, France.
Three day workshop course on data processing using pyGOAT python toolbox developed at LIENSs.

2019 **Reconstruction of the free-surface from the bottom pressure records**, *LIENSs*, La Rochelle University, France.
One day course on processing of bottom pressure record by Dr. Xavier Bertin.

2018 **SCHISM Modelling Course**, *ICBM*, University of Oldenburg, Germany.
Course on SCHISM modelling system conducted by the lead developer Dr. Joseph Zhang.

2017 **Hydrodynamic modelling**, *Indo-French Cell for Water Science*, Indian Institute of Science, Bangalore, India.
Worked with Dr. Yann Krien on SCHISM modeling system for hydrodynamics modeling in the Bay of Bengal.

2016 **Spaceborne Altimetry and Data Processing**, *Indo-French Cell for Water Science*, Indian Institute of Science, Bangalore, India.
Worked with Dr. Stephane Calmant on the theory of spaceborne altimetry and processing of altimetry data using MATLAB.

Awards

2005 Primary Talentpool Scholarship, Nabiganj, Bangladesh

2008 Junior Talentpool Scholarship, Habiganj, Bangladesh

2019 Best presenter at CNES-JC2, December 2019

Communications

2014 Oral presentation at Workshop on University Admission, Habiganj

2014 Showcase presentation on "Creating an Urban Oesis"

2016 Poster presentation on OSTST - 2016, La Rochelle, France

2017 Presetation in HELIX closing workshop - 2017, Dhaka, Bangladesh

2019 Paper presentation in ICWFM 2019, Dhaka, Bangladesh

2019 Poster presentation in SWOT meeting, Bordeaux, France

2019 Oral talk at IUGG on Probabilistic Extreme Water Level, Montreal, Canada

2019 Short Presentation at JC2, Toulouse, France

2020 Poster Presentation at AGU on Coastal tide, Online

2021 Oral talk at ICWFM, Online, Dhaka, Bangladesh

Peer-Reviewed Publications

Bernard, A., Long, N., Becker, M., **Khan, J.**; & Fanchette, S. (2021). Bangladesh's vulnerability to cyclonic coastal flooding. Nat. Hazards Earth Syst. Sci. Discuss. (preprint, in review), doi:10.5194/nhess-2021-8

Khan, M. J. U., Durand, F., Bertin, X., Testut, L., Krien, Y., Islam, A. K. M. S., Pezerat, M., & Hossain, S. (2021). Towards an efficient storm surge and inundation forecasting system over the Bengal delta: Chasing the super-cyclone Amphan. Nat. Hazards Earth Syst. Sci. Discuss.

(preprint, in review). doi:10.5194/nhess-2020-340

Roy, B., Khan, M. S. M., Islam, A. K. M. S., Mohammed, K., **Khan, M. J. U.** (2021). Climate-induced food inundation for the Arial Khan River of Bangladesh using open-source SWAT and HEC-RAS model for RCP8.5-SSP5 scenario. SN Appl. Sci. 3, 648 (2021). doi:10.1007/s42452-021-04460-4

Khan, M. J. U., Durand, F., Testut, L., Krien, Y., & Islam, A. K. M. S. (2020). Sea level rise inducing tidal modulation along the coasts of Bengal delta. Continental Shelf Research, 211, 104289. doi:10.1016/j.csr.2020.104289

Das, M. K., Islam, A. K. M. S., Karmakar, S., **Khan, M. J. U.**, Mohammed, K., Islam, G. M. T., Bala, S. K., & Hopson, T. M. (2020). Synoptic flow patterns and large-scale characteristics of flash flood-producing rainstorms over northeast Bangladesh. Meteorology and Atmospheric Physics. doi:10.1007/s00703-019-00709-1

Haque, S., Ali, Md. M., Islam, A. K. M. S., & **Khan, J. U.** (2020). Changes in flow and sediment load of poorly gauged Brahmaputra river basin under an extreme climate scenario. Journal of Water and Climate Change, 12 (3): 937-954. doi:10.2166/wcc.2020.219

Khan, J. U., Islam, A. K. M. S., Das, M. K., Mohammed, K., Bala, S. K., & Islam, G. M. T. (2020). Future changes in meteorological drought characteristics over Bangladesh projected by the CMIP5 multi-model ensemble. Climatic Change. doi:10.1007/s10584-020-02832-0

Becker, M., Papa, F., Karpytchev, M., Delebecque, C., Krien, Y., **Khan, J. U.**, Ballu, V., Durand, F., Cozannet, G. L., Islam, A. K. M. S., Calmant, S., & Shum, C. K. (2020). Water level changes, subsidence, and sea level rise in the Ganges–Brahmaputra–Meghna delta. Proceedings of the National Academy of Sciences, 201912921. doi:10.1073/pnas.1912921117

Khan, M. J. U., Islam, A. K. M. S., Bala, S. K., & Islam, G. M. T. (2020). Changes in climate extremes over Bangladesh at 1.5°C, 2°C, and 4°C of global warming with high-resolution regional climate modeling. Theoretical and Applied Climatology. doi:10.1007/s00704-020-03164-w

Khan, M. J. U., Ansary, M. N., Durand, F., Testut, L., Ishaque, M., Calmant, S., Krien, Y., Islam, A. K. M. S., & Papa, F. (2019). High-Resolution Intertidal Topography from Sentinel-2 Multi-Spectral Imagery: Synergy between Remote Sensing and Numerical Modeling. Remote Sensing, 11(24), 2888. doi:10.3390/rs11242888

Das, M. K., Islam, A. K. M. S., Karmakar, S., **Khan, M. J. U.**, Mohammed, K., Islam, G. M. T., Bala, S. K. & Hopson, T. M. (2019). Synoptic flow patterns and large-scale characteristics of flash flood-producing rainstorms over northeast Bangladesh, Meteorology and Atmospheric Physics, Springer Science and Business Media LLC, 2019 pp. 1-30, doi:10.1007/s00703-019-00709-1

Durand, F., Piecuch, C. G., Becker, M., Papa, F., Raju, S. V., **Khan, J. U.**, & Ponte, R. M. (2019). Impact of Continental Freshwater Runoff on Coastal Sea Level. Surveys in Geophysics. doi:10.1007/s10712-019-09536-w

Roy, B., Islam, A. K. M. S., Islam, G. M. T., **Khan, M. J. U.**, Bhattacharya, B., Ali, M. H., Khan, A. S., Hossain, M. S., Sarker, G. C., & Pieu, N. M. (2019). Frequency Analysis of Flash Floods for Establishing New Danger Levels for the Rivers in the Northeast Haor Region of Bangladesh. Journal of Hydrologic Engineering, 24(4), 05019004. doi:10.1061/(asce)he.1943-5584.0001760

Khan, M. J. U., Islam, A., Das, M. K., Mohammed, K., Bala, S. K., & Islam, G. M. T. (2019). Observed trends in climate extremes over Bangladesh from 1981 to 2010. Climate Research, 77(1), 45–61. doi:10.3354/cr01539

Krien, Y., Arnaud, G., Cécé, R., Ruf, C., Belmadani, A., **Khan, J.**, Bernard, D., Islam, A. K. M. S., Durand, F., Testut, L., Palany, P., & Zahibo, N. (2018). Can We Improve Parametric Cyclonic Wind Fields Using Recent Satellite Remote Sensing Data? Remote Sensing, 10(12), 1963. doi:10.3390/rs10121963

Mohammed, K., Islam, A. K. M. S., Islam, G. M. T., Alfieri, L., **Khan, M. J. U.**, Bala, S. K., & Das, M. K. (2018). Future Floods in Bangladesh under 1.5°C, 2°C, and 4°C Global Warming Scenarios. Journal of Hydrologic Engineering, 23(12), 04018050. doi:10.1061/(asce)he.1943-5584.0001705

Bergmann, M., Durand, F., Krien, Y., **Khan, M. J. U.**, Ishaque, M., Testut, L., Calmant, S., Maisongrande, P., Islam, A. K. M. S., Papa, F., & Ouillon, S. (2018). Topography of the intertidal zone along the shoreline of Chittagong (Bangladesh) using PROBA-V imagery. International Journal of Remote Sensing, 1–21. doi:10.1080/01431161.2018.1504341

Mohammed, K., Islam, A. S., Islam, G. T., Alfieri, L., Bala, S. K., & **Khan, M. J. U.** (2017). Extreme flows and water availability of the Brahmaputra River under 1.5 and 2°C global warming scenarios. Climatic Change. doi:10.1007/s10584-017-2073-2

Mohammed, K., Islam, A. K. M. S., Islam, G. M. T., Alfieri, L., Bala, S. K., & **Khan, M. J. U.** (2017). Impact of High-End Climate Change on Floods and Low Flows of the Brahmaputra River. Journal of Hydrologic Engineering, 22(10), 04017041. doi:10.1061/(asce)he.1943-5584.0001567

Computer Skills

OS	UNIX/Linux, Microsoft™ Windows®
Programming	Python, R, MATLAB®, Fortran, C/C++, Bash
Models	SCHISM, WRF, Delft-3D, HEC-RAS

Languages

Bengali	**Mother-tongue**	*Fluent conversation, reading and writing*
English	**Expert**	*Fluent conversation, reading and writing*
French	**Basic**	*Basic words and phrases only, Level A1*

Hobbies

- Web Programming
- Fantasy Books
- Blogging
- Sightseeing
- Computer Hardwares
- Philosophy
- Cleaning up!
- Tracking

Other Experiences and Activities

Vocational

2015 **Consultant Designer**, *Habiganj Zilla Parishad*, Design and Drafting of Baniyachong Shahi Eidgah Gate, Baniyachong.
Budget: 0.8M BDT

Organizing

2012 - 2014 **Organizer**, Math Olympiad, Habiganj.

2013 **Converner**, Science Workshop, Habiganj.

2014 **Organizer**, Workshop on University Admission, Habiganj.

Miscellaneous

2015 **Web Developer**, *Personal Project*, Development and Deployment of Website for University Students Association of Habiganj (USAH).

2017 **Web Developer**, *Professional Side Project*, Development of Website for FFEWS system ffews.github.io, a portal to post daily weather and flood forecast.

2017 **Web Developer**, *Personal Project*, Development of Website for gronthalap.com, a Book review portal.

Reference

Dr. Fabien Durand, *Charge de Recherche*, LEGOS, Institut de Recherche pour le Developpement (IRD).
fabien.durand@ird.fr

Dr. A.K.M Saiful Islam, *Professor*, Institute of Water and Flood Management, Bangladesh University of Engineering and Technology (BUET).
akmsaifulislam@iwfm.buet.ac.bd