Md Jamal Uddin Khan

Curriculum Vitae

59 rue Alcide d'Orbigny
La rochelle - 17000, France
+33 7 69 89 65 80
jamal.khan@univ-lr.fr
jamal919@gmail.com

Education

2007 **Secondary School Certificate Exam**, *Habiganj Govt. High School*, Sylhet Board, Bangladesh, *GPA – 5.00 on 5.00*.

2009 **Higher Secondary Certificate Exam**, *Jalalabad Cantonment Public School and College*, Sylhet Board, Bangladesh, *GPA – 5.00 on 5.00*.

2010-2015 **B.Sc in Civil Engineering**, *Bangladesh University of Engineering and Technology (BUET), Bangladesh*, Major – Structural Engineering, Minor – Transportation Engineering, *CGPA – 3.31 on 4.00*.

2015-2017 **M.Sc in Civil and Structural Engineering**, *Bangladesh University of Engineering and Technology (BUET), Bangladesh*, *CGPA – 3.58 on 4.00*.

2018-2021 **PhD**, *Océan, Atmosphère, Climat*, Université Toulouse 3 - Paul Sabatier, France.

B.Sc. Thesis

Title *Moment-Curvature Relationships of Original and Jacketed Reinforced Concrete Sections*

Supervisor Professor Dr. Tahsin Reza Hossain

Description In this thesis, a MATLAB® program is developed to determine the numerical moment-curvature relationships of original and jacketed reinforced concrete sections to compute the effect of reinforced concrete jacketing. A comparison is also made among the numerical values and code specified values to be used for non-linear static pushover analysis.

M.Sc. Thesis

Title *Basic Wind Speed Map and Probable Structural Overloading in Bangladesh Under High-Emission Extreme Climate Scenario*

Supervisor Professor Dr. Raquib Ahsan

Description In a warming climate, extreme cases of environmental forces are becoming more and more prominent. It is imperative to know the wind load in Bangladesh in future climate. This assess the changes in wind loading under various climate change scenarios.

Doctoral Thesis

Title *Dynamics of inundation events in the rivers-estuaries-ocean continuum in Bengal delta: synergy between spaceborne remote sensing and hydrodynamic modelling*

Supervisors Dr. Fabien Durand and Dr. Laurent Testut

Description The Bengal delta is the largest in the world. Millions of people are exposed to the riverine and tidal floods, as well as to the frequent deadly cyclone surges. In the last five decades, coastal flooding took more than half a million lives. Ongoing global sea level rise will only further aggravate the vulnerability of this impoverished region. In this thesis, we mapped more than 1000km^2 of the tidally-flooded coastal landmass. At some of the adjoint areas, the tide will amplify with sea level rise and aggravate flooding. I showed that for a realistic numerical modelling and forecasting of extreme water levels and associated coastal flooding during storm surges in the Bengal delta region, not only tide and surge but also waves are instrumental. Ensemble simulations of thousands of synthetic storms suggested that about three million people currently settled in the coastal region of the Bengal delta are exposed to the one-in-a-50-year flood.

Experience

Research

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 past 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 to determine the mechanisms of coastal flooding during extreme events. The work is jointly funded by CNES and Embassy of France in Dhaka.

Dec. 2015 – Feb. 2018 **Research Assistant**, *Climate Modeling and Simulation Lab*, IWFM, BUET.
Working with Climate and Atmospheric Model, Hydrologic Modeling, Data Processing, Infection Forecasting Modeling

June 2016 – October 2016 **Research Associate**, *CIMMYT-Bangladesh*, Dhaka, Bangladesh.
Developing a meteorological factor based wheat blast model.

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.

Training

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.

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.

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

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.

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

Awards

2005 Primary Talentpool Scholarship, Nabiganj

2008 Junior Talentpool Scholarship, Habiganj

2019 Best presenter at CNES-JC2

Computer Skills

OS Microsoft™ Windows®, UNIX/Linux

Text Microsoft Office, OpenOffice/LibreOffice, Emacs/Org-Mode, LaTeX

GIS ArcGIS, QGIS

Enggineering AutoCAD®, SAP2000®, ETABS, CSiBridge, CSi SAFE

Programming R, Python, MATLAB®, Fortran,C/C++, Bash

Models SCHISM, WRF, Delft-3D, HEC-RAS

Communication Skills

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, Montreal, Canada

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*

Interests

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

Peer-Reviewed Publications

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. https://doi.org/10.1061/(asce)he.1943-5584.0001567

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 ÂřC global warming scenarios. Climatic Change. https://doi.org/10.1007/s10584-017-2073-2

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 1.5ÂřC, 2ÂřC, and 4ÂřC Global Warming Scenarios. Journal of Hydrologic Engineering, 23(12), 04018050. https://doi.org/10.1061/(asce)he.1943-5584.0001705

Krien, Y., Arnaud, G., CÃľcÃľ, 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. https://doi.org/10.3390/rs10121963

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, 1âĂŞ21. https://doi.org/10.1080/01431161.2018.1504341

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. https://doi.org/10.3390/rs11242888

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), 45âĂŞ61. https://doi.org/10.3354/cr01539

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. https://doi.org/10.1061/(asce)he.1943-5584.0001760

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. https://doi.org/10.1007/s10712-019-09536-w

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 GangesâĂŞBrahmaputraâĂŞMeghna delta. Proceedings of the National Academy of Sciences, 201912921. https://doi.org/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 ÂřC, 2 ÂřC, and 4 ÂřC of global warming with high-resolution regional climate modeling. Theoretical and Applied Climatology. https://doi.org/10.1007/s00704-020-03164-w

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. https://doi.org/10.1007/s10584-020-02832-0

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, jwc2020219. https://doi.org/10.2166/wcc.2020.219

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. https://doi.org/10.1007/s00703-019-00709-1

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. https://doi.org/10.1016/j.csr.2020.104289

Hobbies

- Programming
- Fantasy Books
- Blogging
- Sightseeing
- Open Source Technologies
- Philosophy
- Cleaning up!
- Tracking

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