

Md. Motaleb Hossain, PhD

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Educational Qualifications

- Post doctorate fellow** (2019-2021) Post doctorate, Molecular & Life Nonlinear Sciences laboratory, Research Institute for Electronic Science, Hokkaido University, Japan
- PhD** (2015) Doctor of Philosophy (PhD) in **Physical Hydrology** from Laboratory of Physical Hydrology, Department of Natural History Sciences, Graduate School of Science, Hokkaido University, Japan (December 2015).
Thesis Title: Sediment-Loading Processes in a Forested Catchment Influenced by Slope Failure
- Masters of Science** (2002) Master of Science (MS) in Applied Mathematics, Department of Mathematics, University of Dhaka, Bangladesh (Examination held in 2005, Result Published in 2006)
Thesis Title: Sensitivity Analysis of Physiographic Parameters through Lumped Kinematics Wave Model
Result: First Class, Position: **1st Class 3rd**
- Bachelor of Science** (2001) Bachelor of Science (B.Sc. Hon's) in Mathematics, Department of Mathematics, University of Dhaka, Bangladesh. (Examination held in 2003)
Project Title: Dynamic of an Epidemic Model (AIDS)
Result: First Class, Position: **1st Class 2nd**
- Higher Secondary Certificate** (1997) Group: Science
Result: First Division with Star Marks
- Secondary School Certificate** (1994) Group: Science
Result: First Division with Star Marks

Publications

21. Noshin Anjum, Md. Motaleb Hossain, “Sensitivity Analysis of the Physiographic Parameters of the Teesta River Basin by Hydrological Modelling”, *Asian Journal of Geographical Research*, July 2024.
20. Udoy S. Basak, Sulimon Sattari, Md. Motaleb Hossain, Kazuki Horikawa, Mikito Toda & Tamiki Komatsuzaki “Comparison of particle image velocimetry and the underlying agents dynamics in collectively moving self-propelled particles”, *Scientific reports*, August 2023.
19. Md. Ekramul Islam, Md. Motaleb Hossain, Khalifa Mohammad Helal, Udoy S.Basak, Rajandra Chadra Bhowmik & M. A. Akbar “Solitary wave analysis of the Kadomtsev-Petviashvili model in mathematical physics”, *Arab Journal of Basic and Applied Sciences*, vol.30 , no.1 Taylor & Francis , pp.329-340, May 2023.
18. Md. Motaleb Hossain, Kazuhisa A. Chikita, Yoshitaka Sakata, “Sediment Loading Processes in a Forested Catchment: Modeling and Observations”, *Open Journal of Modern Hydrology*, February 2023.
17. Md. Motaleb Hossain, Mousumi Akhter, “Solitons of the Jimbo-Miwa Equation through the Sine-Gordon Expansion Scheme”, *Journal of Advances in Mathematics and Computer Science*, January 2023.

16. Md. Jasim Uddin, S.M. Sohel Rana, **Md. Motaleb Hossain**, “**Complexity Analysis To Fractional Order Enzyme Model**”, *Nternational Journal of Mathematics And Computer Research*, Page No.: 3178-3185, January 2023.
15. **Md. Motaleb Hossain**, Mishu Majumder, Mousumi Mitra, Sarker Md. Sohel Rana, Md. Jasim Uddin, Md. Sazzad Hossain, “**Sensitivity Analysis of Physiographic Parameters in Eastern Region of Bangladesh**”, *International Journal of Geology, Agriculture and Environmental Sciences*, Vol. 10 Issue 2. p. 10-20, December 2022.
14. **Md. Motaleb Hossain**, Mousumi Mitra, Mishu Majumder, Khadiza Akter Mitu, Md. Sazzad Hossain, “**Application of Semi-distributed Hydrological Model in Northern Region of Bangladesh**, *International Journal of Geology, Agriculture and Environmental Sciences*, Vol. 10 Issue 2. p. 1-9, December 2022.
13. Udo S. Basak, Sulimon Sattari, **Md. Motaleb Hossain**, Kazuki Horikawa, Tamiki Komatsuzaki, “**Transfer entropy dependent on distance among agents in quantifying leader-follower relationships**”, *Biophysics and Physicobiology*, May 2021.
12. Udo S. Basak, Sulimon Sattari, **Md. Motaleb Hossain**, Kazuki Horikawa, Tamiki Komatsuzaki, “**An information-theoretic approach to infer the underlying interaction domain among elements from finite length trajectories in a noisy environment**”, *J. Chem. Phys.* 154, 034901 January, 2021.
11. Khadiza Akter Mitu, **Md. Motaleb Hossain**, Md. Sazzad Hossain, Kazuhisa A. Chikita, “**Development of Rainfall-Runoff Model for Northeast Region of Bangladesh**”, *International Journal of Geology, Agriculture and Environmental Sciences* Vol. 6, Issue 4, pp. 10-16, August, 2018.
10. Takuto Miyamoto, Kazuhisa A. Chikita, Yoshitaka Sakata, Yasunori Ochiai, **Md. Motaleb Hossain**, Hideo, Ohyagi, Isao Kudo, “**Loading processes of major ions in a forested catchment: Observations and modelling**”, *Jour. Jpn. Assoc. Hydrol. Sci.*, Vol. 46, No. 1, pp. 39-57, March, 2016.
9. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Yoshitaka Sakata, Takuto Miyamoto “**Fluvial Sediment Transport in a Forested Catchment Influenced by Slope Failure**” *International Journal of Geology, Agriculture and Environmental Sciences* Vol. 3, Issue 6, pp. 37-41, December, 2015.
8. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Yoshitaka Sakata, Takuto Miyamoto, Yasuhiro Ochiai “**Groundwater Leakage and River Runoff in a Catchment Influenced by Tectonic Movement**”, *Open Journal of Modern Hydrology* Vol. 5, pp. 32-44, April, 2015.
7. Kazuhisa A. Chikita, Hiroyuki Ueyehara, Abdullah Al Mamun, Francesca De Pascalis, Georg Umgiesser, Wataru Iwasaka, **Md. Motaleb Hossain**, Yoshitaka Sakata “**Water and heat budgets in a coastal lagoon controlled by groundwater outflow to the ocean**”, *Limnology*, Vol. 16, pp. 149–157, April, 2015.
6. **Md. Motaleb Hossain** “**Analysis of Flood Routing**” *Dhaka Univ. J. Sci.* Vol. 62, No. 2, pp. 69-73, July, 2014.
5. Kamruzzaman, Mohammad Wahiduzzaman, Mahmud Alam, M. Ferdows, **Md. Motaleb Hossain** & Raushan Ara Quadir “**Numerical Solution of Fluid Flow Through A Rotating Rectangular Straight Duct With Magnetic Field**”, *International Journal of Mechanical Engineering (IJME)* Vol.2, Issue 2, pp. 69-86, May, 2013.
4. M.A. Samad, Sajid Ahmed, **Md. Motaleb Hossain**, “**MDH Heat and Mass Transfer Forced Convection Flow Along a Stretching Sheet with Heat Generation, Radiation and Dissipation**”, *Dhaka Univ. J. Sci.* Vol. 59, N. 2, pp. 201-208, July, 2011.
3. **Md. Motaleb Hossain**, “**Analysis of Instantaneous Unit Hydrograph Parameters**”, *Dhaka Univ. J. Sci.* Vol. 59, N. 2, pp. 217-221, July, 2011.

2. M. Ferdows, **Md. Motaleb Hossain**, S. Sivasankaran and Masahiro OTA, “**Steady heat transfer boundary layer solutions of polar fluid**”, *Int. Review of Mechanical Engineering*, Vol. 4, N. 2, pp. 185-187 , 2010.

1. **Md. Motaleb Hossain**, “**Sensitivity Analysis of Physiographic Parameters**”, *Dhaka Univ. J. Sci.* Vol. 58, No. 1, pp. 79-84, January, 2010

Book: Chapter 2

1. Kazuhisa A. Chikita, Yoshitaka Sakata, Shingo Mayeda, Yuichi Nishimura and **Md. Motaleb Hossain** “**Coastal Lagoons Hydrologically Controlled by Groundwater Outflow to the Ocean: The Role of Tsunami Deposits**”, In book: *Coastal Lagoons: Geology, Characteristics and Diversity*, Chapter: 2, Publisher: NOVA Science Publishers, Inc., August 2016

Conference

15. **Md. Motaleb Hossain**, Sulimon Sattari, Udoy S. Basak, Hidenori Hashimura, Kazuki Horikawa, Satoshi Sawai, Tamiki Komatsuzaki, “**Analysis of correspondence between cyclic-AMP wave and cell motion based on phase analysis**”, Singularity Biology Conference, Japan, March 2021[Poster presentation]
14. **Md. Motaleb Hossain**, Sulimon Sattari, Udoy S. Basak, Hidenori Hashimura, Kazuki Horikawa, Satoshi Sawai, Tamiki Komatsuzaki, “**From autonomous to collective: development of chemotaxis in Dictyostelium Discoideum from starvation to the formation of spiral wave**”, Singularity Biology Conference, Japan, March 2021[Poster presentation]
13. **Md. Motaleb Hossain**, Sulimon Sattari, Udoy S. Basak, Kazuki Horikawa, Tamiki Komatsuzaki, “**Analysis of Dictyostelium Discoideum cells motion response to a chemoattractant cyclic-AMP wave**”, Hokkaido Tohuko Conference, March 2021
12. **Md. Motaleb Hossain**, Sulimon Sattari, Udoy S. Basak, Kazuki Horikawa, Tamiki Komatsuzaki “**Vector analysis of amoeba motion response to a cyclic-AMP wave**”, 21st RIES-HOKUDAI International Symposium, December 2020 [Poster presentation]
11. **Md. Motaleb Hossain**, Sulimon Sattari, Udoy S. Basak, Kazuki Horikawa, Tamiki Komatsuzaki “**Vector analysis of amoeba motion with respect to the propagation of chemoattractant cyclic-AMP**”, 58 Biophysical Conference, Japan, July 2020 [Poster presentation]
10. Khadiza Akter Mitu, **Md. Motaleb Hossain**, Md. Mubarak Hossain, “**Development of Rainfall-Runoff Model for Northeast Region of Bangladesh**”, 20th International Mathematics Conference, Bangladesh (December 2017) [Poster presentation]
9. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Yoshitaka Sakata and Shingo Mayeda “**Sediment-loading processes in a forested catchment influenced by slope failure: Modelling**” Limnology Conference, Hokkaido, Japan (December 2015)
8. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Yoshitaka Sakata and Shingo Mayeda “**Sediment-loading processes in a forested catchment accompanied by slope failure**” Hydrologic Conference, Akita, Ishikawa (November, 2015)
7. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Wataru Iwasaka and Takuto Miyamoto “**Sediment loading processes in a geologically active and forested catchment**” JpGU Meeting Makuhari Chiba, Japan (May 2015)

6. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Wataru Iwasaka and Takuto Miyamoto “**Sediment loading processes in a tectonic and forested catchment (2)**”, Limnology Conference, Hokkaido, Japan (December 2014)
5. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Wataru Iwasaka and Takuto Miyamoto “**Sediment loading processes in a tectonic and forested catchment**” Hydrologic Conference, Noto, Ishikawa (December, 2014)
4. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Wataru Iwasaka and Takuto Miyamoto “**Sediment loading processes in a tectonic and forested catchment facing a coastal region**” Asia Oceania Geoscience Meeting, Sapporo, Hokkaido, Japan (July 2014)
3. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Wataru Iwasaka and Takuto Miyamoto “**Sediment-loading processes in a tectonic and forested catchment: field observations and modelling**” JpGU Meeting, Yokohama, Japan (April 2014)
2. **Md. Motaleb Hossain**, Kazuhisa A. Chikita, Wataru Iwasaka and Takuto Miyamoto “**Sediment-loading processes in a forested catchment: field observations and modelling**” Limnology Conference, Hokkaido, Japan (December 2013)
1. **Md. Motaleb Hossain**, Kazuhisa Chikita, Abdullah Mamun, Wataru Iwasaka, “**Modeling river sediment load from a coastal forested catchment**”, JpGU 2013 meeting, Makuhari Chiba, Japan (May 2013) [Poster presentation]

Teaching Experience

1. Professor

October 31, 2023 to continue
Department of Mathematics
University of Dhaka, Bangladesh

2. Associate Professor

March 22, 2018 to October 30, 2023
Department of Mathematics
University of Dhaka, Bangladesh

3. Assistant Professor

March 31, 2011 to March 21, 2018
Department of Mathematics
University of Dhaka, Bangladesh

4. Lecturer

February 12, 2007 to March 30, 2011
Department of Mathematics
University of Dhaka, Bangladesh

5. Lecturer

September 3, 2006 to February 10, 2007
School of Business,
Asian University of Bangladesh (AUB)

Computer Programing

MATLAB, FORTRAN, Mathematica, SWAT (Soil Water Assessment Tool) Model

Personal Information: Date of Birth August 05, 1979

References

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