UNIVERSITÀ DEGLI STUDI DI MILANO

TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE 4867**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Scienze Agrarie e Ambientali - Produzione, Territorio, Agroenergia of Università degli Studi di Milano**

Scientist- in – charge: **Prof. Claudio Gandolfi**

[Name and surname]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Paul
Name	Pranesh
Date of birth	[18, 09, 1987]

PRESENT OCCUPATION

Appointment	Structure
Chinese Academy of Sciences	Postdoctoral Researcher

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	PhD	Indian Institute of Technology Kharagpur	Defended 01/12/2018; convocation eld on 27/08/2019
Specialization			
PhD	Hydrology	Indian Institute of Technology Kharagpur	Defended 01/12/2018; convocation eld on 27/08/2019
Master	Water Management	Indian Institute of Technology Kharagpur	2013
Degree of medical specialization			
Degree of European specialization			
Other	B.Tech in Agricultural Engineering	Bidhan Canra Krishi Viswavidyalaya	2011

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REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City
-	-	-

FOREIGN LANGUAGES

Languages	level of knowledge
English	Reading, writing and speaking (Fluent)

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2019-2021	Postdoctoral fellowship from Institute of Geographic Sciences and Natural Resources Research (IGSNRR), Chinese Academy of Sciences under International Fellowship Initiative (IFI) of IGSNRR
2013-2018	Ministry of Human Resources Development (MHRD) Fellowship during Ph.D. Programme.
2011-2013	MHRD Fellowship during M.Tech. Programme.
2011	All India 39th rank in Graduate Aptitude Test in Engineering (GATE) – 2011
2010	All India 60th rank in Graduate Aptitude Test in Engineering (GATE) – 2010
2007-2011	Merit Scholarship in B.Tech, depending on semester results.

TRAINING OR RESEARCH ACTIVITY

description of activity
The title of my Ph.D. thesis is 'Development of a conceptual hydrological model for watersheds in India'. The developed model is a large scale conceptual model with a 1 km × 1 km, 2.5 km × 2.5 km, 5 km × 5 km and 10 km × 10 km grid cell resolutions as well as a modular structure. The name of the model is Satellite based hydrological model (SHM). It has five modules: Surface Water (SW), Forest (F), Snowmelt (S), Groundwater (GW) and Routing (ROU). I have worked with an interdisciplinary team (IIT Guwahati, Indian Institute of Science (IISc) Bangalore, North Eastern Regional Institute of Science and Technology (NERIST), Nirjuli) during development of the model. Testing of the model remained my own responsibility. Algorithms of SW and ROU modules are developed and coded by myself. S, F, and GW modules, however, have been developed by NERIST, Nirjuli; IIT Guwahati and IISc Bangalore, respectively in C++, Matlab and Python programming language. At the time of integration, I had to recode these three modules into Java programming language. Thus, integrated SHM has been developed with graphical user interface (GUI). The GUI was developed, also, in Java platform. I have learned the above mentioned languages during the period. I have also learned handling different meteorological data using R along with development of MySQL database, during development of the model database. I have compared SHM with Arc SWAT model to check the credibility of SHM. I have also worked on 'Modelling Runoff and sediment yield from Brahmani-Baitarani river basin under present and climate change condition using Arc SWAT model' during my M.Tech. Presently I am working as a postdoctoral fellow (Joined on August, 2019) at Institute of Geographic Sciences and Natural Resources Research (IGSNRR), Chinese Academy of Sciences under International Fellowship Initiative (IFI) of IGSNRR. My research does focus on disentangling of the hydrological signatures in Yellow river basin of China using machine learning techniques. I am using locally gauged

precipitation, maximum & minimum temperature, Moderate Resolution Imaging Spectroradiometer (MODIS) leaf area index, MODIS albedo, MODIS emmisivity and MODIS solar radiation data for the purpose.

PROJECT ACTIVITY

Year	Project
October, 2018-July, 2019	Development and testing of a large scale conceptual hydrological model (TLM), funded by National Institute of Hydrology (NIH), Roorkee, India.
July, 2018 - October, 2018	Soil and Water Conservation Engineering for National Programme on Technology Enhanced Learning (NPTEL), at Indian Institute of Technology Kharagpur.
March 2014-March 2017	My Ph.D. was part of PRACRITI-2, launched by Space Application Centre (SAC), Ahmedabad. During the project, I was part of the group (IIT Kharagpur, IIT Guwahati, IISc, Bangalore and NERIST, Itanagar) for developing a large scale conceptual hydrological model, namely Satellite based Hydrological Model (SHM).

PATENTS

Patent
None

CONGRESSES AND SEMINARS

Date	Title	Place
16-18 September, 2019	Paul, P. K., Zhang, Y., (2019). How Greening and browning effect hydrological processes? International Speciality Conference (Water Security: New Technologies, Strategies, Policies and Institutions)	Beijing, China
8-13 April, 2018	Paul, P. K., Singh, R., Mishra, A., Panigrahy, N., (2018). Satellite-based Hydrological Model (SHM): Quantification of Uncertainty in Streamflow Simulation. European Geosciences Union (EGU) General Assembly 2018	Vienna, Austria
23-28 April, 2017	Gaur, S., Paul, P. K., Singh, R., Mishra, A., Gupta, P. K., Singh, R. P., (2017). Operational Testing of Satellite based Hydrological Model (SHM). European Geosciences Union (EGU) General Assembly 2017	Vienna, Austria
23-28 April, 2017	Kumari, B., Paul, P. K., Singh, R., Mishra, A., Gupta, P. K., Singh, R. P., (2017). Regionalization Study of Satellite based Hydrological Model in Hydrologically Homogeneous River Basins of India. European Geosciences Union (EGU) General Assembly 2017	Vienna, Austria
November 2-3, 2016	Paul, P. K., Mishra, A., (2016). Assessing streamflow under changing monsoon climate in two neighbouring river basins. International Conference on Climate Change, Water, Agriculture and Food Security (ICCCWAFS 2016), ICRISAT	Hyderabad, India
17-22 April, 2016	Kumari, N., Paul, P. K., Singh, R., Panigrahy, N., Mishra, A., Gupta, P.K., Singh, R.P., (2016). The Satellite Based Hydrological Model (SHM): Routing Scheme and its Evaluation. European Geosciences Union (EGU) General Assembly, 2016	Vienna, Austria
04-06	Paul, P. K., Mishra, A., Singh, R., Panigrahy, N., (2016). Development	Colombo, Srilanka

January, 2016	of database for a conceptual hydrological model for the Indian Territory. International Perspective on Water Resources and the Environment (IPWE), 2016	
04-06 January, 2016	Mishra, A., Dey, P., Paul, P. K., (2016). Separating Climate Change and Human Impacts on Annual Stream Flow. International Perspective on Water Resources and the Environment (IPWE), 2016	Colombo, Srilanka
08-10 April, 2015	Paul, P. K., Mishra, A., (2015). Uncertainty of climate change impacts on sediment yield in Baitarani river basin (Poster). GLACINDIA: Stakeholder WORKSHOP ON IDENTIFYING CLIMATE CHANGE INFORMATION NEEDS and Training on Climate modeling and Climate Change Research, innovation and Services.	New Delhi, India
28-29 December, 2014	Paul, P. K., Mishra, A., (2014). Uncertainty of climate change impacts on water resources in Brahmani river basin in India. International Conference on Modeling Tool for Sustainable Water Resource Management (MTSWRM, 2014)	Medak, Telengana, India
07-09 November, 2014	Paul, P. K., Mishra, A., (2014). Uncertainty of climate change impacts on sediment yield in Brahmani river basin in India. National Conference on Emerging Technology Trends in Agricultural Engineering (ETTAE 2014),	Nirjuli, Arunachal Pradesh, India

PUBLICATIONS

Articles
1. Paul, P. K., Gaur, S., Kumari, B., Mishra, A., Panigrahy, N., Singh, R., (2020). Application of a newly developed large-scale conceptual hydrological model in simulating streamflow for credibility testing in data scarce condition. Natural Resource Modeling, 33(4), e12283. https://doi.org/10.1111/nrm.12283
2. Nagdeve, M., Paul, P. K. (Corresponding Author), Zhang, Y. (Corresponding Author), Singh, R., (2021). Continuous Contour Trench (CCT): Understandings of Hydrological Processes after Standardization of Dimensions and Development of a User Friendly Software. Soil and Tillage Research, 205(C): 104792. https://doi.org/10.1016/j.still.2020.104792
3. Zhang, J., Zhang, Y. (Corresponding Author), Song, J., Cheng, L., Paul, P. K., Gan, R., Shi, X., Luo, Z., Zhao, P., (2020). Large-scale baseflow index prediction using hydrological modelling, linear and multilevel regression approaches. Journal of Hydrology, 585, 124780. https://doi.org/10.1016/j.jhydrol.2020.124780
4. Naeem, S., Zhang, Y. (Corresponding Author), Tian, J., Mueen, F., Latif, A., Paul, P. K., (2020). Quantifying the Impact of Anthropogenic Activities and Climate Variations on Vegetation Productivity Change of China from 1985-2015. Remote Sensing, 12(7):1113. https://doi.org/10.3390/rs12071113.
5. Paul, P. K., Zhang, Y. (Corresponding Author), Mishra, A., Panigrahy, N., Singh, R., (2019). Impact of Spatial Discretization on Streamflow Simulation: A Comparison of Grid and HRU based Hydrologic Models. Water (Switzerland), 1(5), 871. DOI: https://doi.org/10.3390/w11050871
6. Paul, P. K., Gaur, S., Kumari, B., Panigrahy, N., Mishra, A., Singh, R., (2019). Diagnosing Credibility of a Large-Scale Conceptual Hydrological Model in Simulating Streamflow. Journal of Hydrologic Engineering (ASCE), 24(4), 4019004. https://doi.org/10.1061/(ASCE)HE.1943-5584.0001766
7. Paul, P. K., Kumari, N., Panigrahy, N., Mishra, A., Singh, R., (2018). Implementation of Cell-to-Cell Routing Scheme in a Large Scale Conceptual Hydrological Model. Environmental Modelling and Software, 101(C): 23-33. https://doi.org/10.1016/j.envsoft.2017.12.003

8. Paul, P. K., Mishra, A., (2018). Streamflow assessment in changing monsoon climate in two neighbouring river basins of eastern India. Journal of Indian Water Resources Society, 38 (1): 1-10.
Books-None

Articles in reviews
Paul, P. K., Zhang, Y. (Corresponding Author), Mishra, A., Panigrahy, N., Singh, R., (2020). Selection of Hydrological model (s) for Study in Developing Countries: Perspective of Global, Continental and Country Scale Model. Journal of Hydrology. (Major Revision)
Paul, P. K., Zhang, Y. (Corresponding Author), Gaur, S., Kumari, B., Mishra, A., Panigrahy, N., Singh, R., Assessment of a Newly Developed Model in Data Scarce Condition using Benchmarking Technique: a Case Study. (2020). Hydrological Sciences Journal. (Major Revision)
Zhang, Y., Zhang, H., Kong, D., Tian, J., Meresa, H., Paul, P. K., (2020). A numerical framework using hydrological modelling for disentangling daily to annual hydrological changes. Journal of Hydrology.
Lyu, S., Zhai, Y., Zhang, Y. (Corresponding Author), Cheng L., Paul, P. K., Song, J., Wang, Y., Zhang, Y., (2020). Identifying baseflow signature behaviours in mountainous catchments. Journal of Hydrology. (Major Revision)
Paudel, B., Wang, Z., Zhang, Y., Rai, M. K., Paul, P. K., (2021). Climate change and its impacts in different physiographic regions of the transboundary Koshi River Basin, Central Himalayas. Journal of Geographical Sciences.

Congress proceedings
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OTHER INFORMATION

Teaching and Mentoring Experiences
Teaching Assistant
o Water Resources System Analysis (Prof. Rajendra Singh and Prof. Chandranath Chatterjee), at Indian Institute of Technology Kharagpur, Spring, 2018
o Surface Water Hydrology (Prof. Rajendra Singh), at Indian Institute of Technology Kharagpur, Autumn, 2017
o Engineering Drawing and Computer Graphics (Dr. Rajib Maity and Dr. Renji Remesan), at Indian Institute of Technology Kharagpur, Autumn, 2017
o Irrigation and Drainage Laboratory (Prof. Ashok Mishra), at Indian Institute of Technology Kharagpur, Autumn, 2016
Mentored Students for their projects and dissertations, at Indian Institute of Technology Kharagpur (assigned by Ph.D. supervisors)
o B.Tech students-3
o M.tech Students-4

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: Beijing, 11/02/2021

Signature

Prosnesh Kumar Paul

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