

Dr. (Mrs.) PALLAVI CHATTOPADHYAY

Assistant Professor

Department of Earth Sciences

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Research interest

- Development and testing of methodologies that permit systematic fusion of geophysical and hydrogeological datasets for improved understanding of subsurface hydrogeological properties
- Study of physical processes associated with the circulation of fluids (single and multiphase) in porous geologic settings through field observations, laboratory work and numerical modeling.
- Near surface geophysical study to answer the questions concerning the measurement and prediction of the rates of subsurface natural processes influenced by hydrological flow, including fracture development, weathering and how rock turns into regolith in different environment
- Application of well logs to understand the subsurface porous media and what controls the fluid flow in this media

Education

- Post Doc. The Pennsylvania State University, PA, USA
- Ph.D. CSIR-National Geophysical Research Institute & Osmania University, Department of Geophysics.
Thesis: Application of numerical modeling and geophysical datasets to understand island aquifer vulnerability
- M.Sc. Tech. Geophysics, Dept. of Geophysics, Banaras Hindu University, INDIA

Positions and awards

- 2015 – present Assistant Professor, Department of Earth Sciences, Indian Institute of Technology Roorkee, Uttarakhand, India
- 2014-2015 CSIR-Pool Scientist, CSIR-National Geophysical Research Institute, Reservoir Modeling Division, Hyderabad, India
- 2011-2014 Post-Doctoral Fellow (National Science Foundation Fellowship, USA), Department of Geosciences, Pennsylvania State University, PA, USA
- 2010-2011 CSIR-Research Associate CSIR-National Geophysical Research Institute, Groundwater Division, Hyderabad, India
- 2007-2010 CSIR-Senior Research Fellow, CSIR-National Geophysical Research Institute, Groundwater Division, Hyderabad, India
- 2005-2007 Junior Research Fellow CSIR-National Geophysical Research Institute, Groundwater Division, Hyderabad, India
- Diamond Jubilee Research Intern Award Fellowship Council of Scientific and Industrial Research

Conference organized

- National Workshop on Advances in Exploration Geophysics for Young Researchers sponsored by Society of Petroleum Geophysicists 25th to 27th October 2010

Memberships

- American Geophysical Union
- Society of Petroleum Geophysicists
- Young Earth Scientist (YES Congress)
- Society of Exploration Geophysics

Reviewer

- Journal of Hydrology
- Water Resources Management
- Environmental Earth Sciences

List of SCI Journal Publications

2015

1. Pallavi Chattopadhyay 2015. Attribution of climate change driven water resources evolution in atolls of Western Indian Ocean. Earth and Planetary Science Letters (Submitted)
2. Pallavi Chattopadhyay 2015. Fracture Patterns and their relations to hydrogeological properties of the fractured Shale formation, Earth surface processes and landforms (Submitted)
3. Pallavi B. Chattopadhyay, N Vedanti, VS Singh. 2015 A Conceptual Numerical Model to Simulate Aquifer Parameters. Water Resources Management 29 (3), 771-784

2014

4. Pallavi B. Chattopadhyay, R Rangarajan 2014. Application of ANN in sketching spatial nonlinearity of unconfined aquifer in agricultural basin. Agricultural Water Management 133, 81-91
5. Pallavi B. Chattopadhyay, N Vedanti 2014. Flow Modelling through Near Surface Fractured Shale. Near Surface Geoscience (EAGU Publication).

2013

6. Pallavi Banerjee Chattopadhyay, Singh V.S.,(2013) Hydrochemical Evidences: Vulnerability of coastal aquifers in Western Indian Ocean to change in weather pattern, Global and Planetary Changes, Volume 106,Pages 123–140 (Impact Factor 3.155)
7. Pallavi Banerjee Chattopadhyay Rangarajan, R. (2013), Application of ANN in sketching spatial nonlinearity of unconfined aquifer in agricultural basin. Agricultural Water Management Vol. 133, pages 81-91 (Impact Factor 2.205)

2012

8. Pallavi Banerjee, Singh V.S.(2012), Statistical Approach for Comprehensive Planning of Watershed Development through Artificial Recharge, Water Resources Management, Vol. 26 (10), 2817 . (Impact Factor 2.259)
9. Pallavi Banerjee, Singh V.S., Singh Ajay, Prasad R.K., Rangarajan R.(2012), Hydrochemical analysis to evaluate the seawater ingress in a small coral island of India, Environmental Monitoring and Assessment, Vol 184(6), pp. 3929-3942 (Impact Factor 1.45)
10. Pallavi Banerjee, Singh V.S.,Prasad R. K (2012), Application of Artificial Neural Network in groundwater forecasting in hard rock region, (Special Memoir on groundwater resource development

and management in hard rocks) special memoir, Journal of Geological Society of India, pp 79-88 (Impact Factor .0596)

2011

11. Pallavi Banerjee, Singh V.S., Chattopadhyay Kausik, Chandra P.C., Singh Bhoop (2011), Artificial neural network model as a potential alternative for groundwater salinity forecasting, Journal of Hydrology, Vol. 398(3-4), pp. 212-220 (Impact Factor 2.956)
12. Prasad R.K., Singh V. S., Krishnamacharyulu K. G., Pallavi Banerjee Pallavi, (2011) Application of drastic model and GIS for assessing vulnerability in hard rock granite aquifer, Environmental Monitoring Assessment, Vol. 176(1-4), 143-155. (Impact Factor 1.592)
13. Pallavi Banerjee, Singh V.S. (2011). Optimization of pumping rate and recharge through numerical modeling with special reference to small coral island aquifer, Physics and Chemistry of the Earth , Vol 36(16), pp. 1363-1372. (Impact Factor 1.41)

2009

14. Pallavi Banerjee, Prasad R.K., Singh V.S., (2009), Forecasting of groundwater level in hard rock region using ANN. Environmental Geology, Vol. 58: pp.1239–1246 (Impact Factor 1.45)
15. Singh V.S., Prasad R.K., Pallavi Banerjee, (2009), Vulnerability of groundwater in an industrial (Bauxite) valley of Lanjigarh (Orissa), India, Environmental Earth Sciences, Vol. 60(8), pp. 1739-1751. (Impact Factor 1.45)

2008

16. Pallavi Banerjee, Sarwade Deepak, Singh V.S. (2008), Characterization of an island aquifer from tidal response, Environmental Geology, Vol. 55, pp. 901-906 (Impact Factor 1.45)
17. Prasad, R.K. Mondal N.C., Pallavi Banerjee, Nandkumar M.V., Singh V.S., (2008), Deciphering potential groundwater zone in hard rock through the application of GIS, Environmental Geology, Vol. 55: pp. 467-475 (Impact Factor 1.45)

Conference papers

1. Pallavi Banerjee, V.S.Singh, Analysis of Tidal Response to Characterize an Island Aquifer, International workshop-2008 On digital geography-special technology in geosciences.
2. Pallavi Banerjee, V.S.Singh and R.K.Prasad, Groundwater Level Forecasting in Hard Rock Region Using Artificial Neural Network, 8th IAHS Scientific Assembly & 37th IAH Congress Hyderabad, India, 6-12 September 2009.
3. Pallavi Banerjee, V.S.Singh, Forecasting of Groundwater Level using Artificial Neural Network, Indian Geophysical Congress, 2008.
4. Pallavi Banerjee, V.S.Singh, Optimization of groundwater pumping on coral island through the application of artificial neural network, 1st World-Y.E.S., Congress 2009, Earth Science Frontier
5. Pallavi Banerjee, V.S.Singh, Emerging challenges in atolls for sustainable groundwater management, 1st World-Y.E.S., Congress 2009, Earth Science Frontier
6. Pallavi Banerjee, V.S.Singh, Groundwater Quality Monitoring for Sustainable Management of Island Aquifer Using Artificial Neural Network Aqua Foundation III World Aqua Congress rd 2-4 December 2009, New Delhi, India

7. Pallavi Banerjee, V.S.Singh and R.K.Prasad Application of Artificial Neural Network in Groundwater Forecasting in Hard Rock Region, National Conference on Groundwater Resource Development and Management in Hard Rocks 2010.
8. Pallavi Banerjee, V.S.Singh, Statistical Method for Identification of Potential Groundwater Recharge Zone Geophysical Research Abstracts Vol. 12, EGU2010-14752-1, 2010 EGU General Assembly 2010
9. R.K. Prasad, Pallavi Banerjee, V.S. Singh, Application of Geographical Information System for identification of Potential Groundwater Artificial Recharge Zones in Hard Rock Terrain, Geophysical Research Abstracts Vol. 12, EGU2010-14752-1, 2010 EGU General Assembly 2010
10. Pallavi Banerjee, V.S.Singh, Sustainable Management of Coral Island Aquifer through Numerical Modelling, AGU Chapman Conference on Complexity and Extreme Events in Geosciences National Geophysical Research Institute, Hyderabad India, 15-19 February 2010
11. Rangarajan, R.; Muralidharan, D.; Hodlur, G. K.; Pallavi Banerjee, Artificial Recharge Rates in Granites, Basalt, Sedimentary and Alluvial Formations of Andhra Pradesh, India, Using Injection Tritium Tracer, EGU General Assembly 2010, held 2-7 May, 2010 in Vienna, Austria, p.15335
12. Pallavi Banerjee, Selection Site for Artificial Recharge of Groundwater in Hard Rocks Using ANN with Special Reference to India EGU General Assembly 2010, held 2-7 May, 2010 in Vienna, Austria, p.15330
13. Pallavi Banerjee, V.S. Singh, Application of ANN for groundwater quality management with special reference to coral island, AOGS, 2010.
14. Pallavi Banerjee, V.S. Singh, Comprehensive Planning of Watershed Development using Statistical Approach, IAMG 2011, University of Salzburg, Austria, September 5-9, 2011.
15. Pallavi Banerjee, V.S.Singh and R.K.Prasad, A. Singh, Evaluation of seawater ingress in a small coral island of India, Geochemistry and geophysics of earth material and environment, January 28th – 29th 2011
16. Pallavi Banerjee, Statistical Approach for Evaluating Data from Chemical Analysis Referring to the Fresh Water and Saline Water Interaction, Geophysical Research Abstracts, Vol14, EGU 2012, 2012, EGU General Assembly 2012, Vienna, Austria, 22-27 April 2012
17. Pallavi Banerjee Chattopadhyay, Kamini Singha, Michael Gooseff, Exploring controls on saline tracer movement within the hyporheic zone using finite-element modeling and electrical resistivity, American Geophysical Union Fall Meeting, San Francisco, 3-7 December, 2012
18. Kamini Singha, Tim White, J. Taylor Perron, Pallavi Banerjee Chattopadhyay, Christopher Duffy, Fracture Patterns within the Shale Hills Critical Zone Observatory, American Geophysical Union Fall Meeting, San Francisco, 3-7 December, 2012
19. Kamini Singha, Brian A. Clarke, Pamela Sullivan, Pallavi Banerjee Chattopadhyay, Susan L. Brantley, Geologic controls on fracture distributions within the Shale Hills Critical Zone Observatory, American Geophysical Union Fall Meeting, San Francisco, 7-12 December, 2013
20. Pallavi Chattopadhyay, R. Rangarajan Integrated application of geophysical electrical method and tracer technique for recharge estimation in a complex hard rock area, May 19-21, 2015, Lawrence, Kansas, US (Submitted)
21. Pallavi Chattopadhyay. Adapting to climate change and sea level rise: comparative study of atoll water resources between Bay of Bengal and Arabian sea regions, International Conference on spatial statistics, June 2-6, 2015. France (Submitted)

Photos

Group of Prof. Susan L. Brantley, Professor of Geosciences, Penn State University, USA



