

**Rabi Narayan Behera, Ph. D.**  
Assistant Professor  
Department of Civil Engineering  
National Institute of Technology Rourkela  
Rourkela – 769 008, Odisha, India

## **CORRESPONDENCE ADDRESS**

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## **EDUCATION**

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<b>Ph. D.</b> in Civil Engineering, National Institute of Technology Rourkela, India	2014
<b>B. Tech.</b> in Civil Engineering, CET Bhubaneswar, BPUT, India	2005

## **EXPERIENCE**

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### **April 2014 - Till Date**

**Assistant Professor**, Department of Civil Engineering, NIT Rourkela, India

### **December 2013 - March 2014**

**Assistant Professor**, School of Civil Engineering, KIIT University, Bhubaneswar, India

### **February 2013 - November 2013**

**Associate Professor**, SIET Dhenkanal, India

### **October 2006 - September 2008**

**Junior Research Fellow**, NIT Rourkela, India

### **July 2005 to August 2006**

**Graduate Executive Trainee**, Kamdar Construction Pvt. Ltd., Pune, India

## **RESEARCH AREAS**

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- Foundation Engineering
- Geoenvironmental Engineering
- Geotechnical Earthquake engineering

- Reinforced Soil
- Stability Analysis of Slopes
- Statistical Modeling
- Numerical Modeling
- Waste Management

## **PUBLICATIONS**

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### ***International Journals***

1. C R Patra, **R N Behera**, N Sivakugan, B M Das (2012). “Ultimate bearing capacity of shallow strip foundation under eccentrically inclined load: part I”, *International Journal of Geotechnical Engineering*, 6(3), 343-352.
2. C R Patra, **R N Behera**, N Sivakugan, B M Das (2012). “Ultimate bearing capacity of shallow strip foundation under eccentrically inclined load: part II”, *International Journal of Geotechnical Engineering*, 6(4), 507-514.
3. **R N Behera**, C R Patra, N Sivakugan, B M Das (2013). “Prediction of Ultimate Bearing Capacity of Eccentrically Inclined Loaded Strip Footing by ANN, part I”, *International Journal of Geotechnical Engineering*, 7(1), 36-44.
4. **R N Behera**, C R Patra, N Sivakugan, B M Das (2013). “Prediction of Ultimate Bearing Capacity of Eccentrically Inclined Loaded Strip Footing by ANN, part II”, *International Journal of Geotechnical Engineering*, 7(2), 165-172.
5. C R Patra, **R N Behera**, N Sivakugan, B M Das (2013). “Estimation of average settlement of shallow strip foundation on granular soil under eccentric loading”, *International Journal of Geotechnical Engineering*, 7(2), 218-222.
6. **R N Behera (2018)**. “Discussion: Bearing Capacity of Shallow Strip Foundations in Sand under Eccentric and Oblique”, *International Journal of Geomechanics*, ASCE, 18(5): 07018007, 1-2, DOI: 10.1061/(ASCE)GM.1943-5622.0001091.
7. **R N Behera**, C R Patra (2018). “Ultimate Bearing Capacity Prediction of Eccentrically Inclined Loaded Strip Footings”, *Geotechnical and Geological Engineering*, 1-52, DOI: 10.1007/s10706-018-0521-z.

### ***International/National Conference/Symposium***

1. P K Haripal, **R N Behera**, C R Patra. “Behavior of Surface Strip footing on Geogrid Reinforced Sand Bed”, *Proceedings of 12<sup>th</sup> International conference of IACMAG*, 1<sup>st</sup> – 6<sup>th</sup> October, 2008, Goa, India, pp. 3552-3558.
2. R Sahu, **R N Behera**, C R Patra. “Settlement Prediction of Centric Inclined Loaded Strip Footing on Granular Soil by ANN”, *Proceedings of Symposium on Sustainable Infrastructure Development (SID)*, 8<sup>th</sup>-9<sup>th</sup> February 2013, IIT Bhubaneswar, Bhubaneswar, Odisha, India, pp. 194-201.
3. R R Sahoo, **R N Behera**, C R Patra. “Application of Artificial Neural Network for

Prediction of Settlement of Strip Footing Subjected to Eccentric Load over Dry Sand Bed”, *Proceedings of Symposium on Sustainable Infrastructure Development (SID)*, 8<sup>th</sup>-9<sup>th</sup> February 2013, IIT Bhubaneswar, Bhubaneswar, Odisha, India, pp. 202-208.

4. R Sahu, **R N Behera**, C R Patra. “Bearing Capacity Prediction of Eccentrically Loaded Footing on Reinforced Sand by ANN”, *Proceedings of 5<sup>th</sup> International Geotechnical Symposium*, 22<sup>nd</sup> – 24<sup>th</sup> May, 2013, Incheon, Korea, pp. 407-414.
5. R R Sahoo, **R N Behera**, C R Patra. “Prediction of Settlement of Strip Footing on Granular Soil under Eccentric Load using ANN”, *Proceedings of 5<sup>th</sup> International Geotechnical Symposium*, 22<sup>nd</sup> – 24<sup>th</sup> May, 2013, Incheon, Korea, pp. 415-421.
6. **R N Behera**, C R Patra. “Experimental Investigation of Strip Footing on Granular Soil”, *Proceedings of Advances in Construction Technology*, 9<sup>th</sup> – 10<sup>th</sup> February, 2014, The Institute of Engineers (India), Odisha State Centre, Bhubaneswar, pp. 96-101.
7. **R N Behera**, C R Patra. “Eccentrically Loaded Strip Footing on Granular Soil-An Experimental Study”, *Proceedings of International Civil Engineering Symposium*, 14<sup>th</sup> – 16<sup>th</sup> March, 2014, VIT University, Vellore, pp. 175-184.
8. **R N Behera**, L B Jena. “Geotechnical Characterization of Construction and Demolition (C&D) Waste”, *Proceedings of National Seminar on Sustainable Materials and Technology for Better Future*, 11<sup>th</sup> – 12<sup>th</sup> November, 2017, NIT Rourkela, India, pp. 25.
9. **R N Behera**, A Kumar, C R Patra “Geotechnical and Geoenvironmental Characterization of TTPS Pond Ash and Its Utilization” *Proceedings of Indian Geotechnical Conference 2017 GeoNEst*, 14<sup>th</sup>-16<sup>th</sup> December 2017, IIT Guwahati, India, pp. 96.
10. A Vamsi, S K Sasmal, **R N Behera**, C R Patra “Development of Alternate Liner Material by Blending Fly Ash, Local Soil and Bentonite” *Proceedings of Indian Geotechnical Conference 2017 GeoNEst*, 14<sup>th</sup>-16<sup>th</sup> December 2017, IIT Guwahati, India, pp. 95.
11. G Das, S K Sasmal, D Sahu, **R N Behera** “Settlement of Surface Strip Foundation Resting on Soft Clay Subjected to Vertical Cyclic Load” Abstract accepted for submission of full paper in *Proceedings of GeoMeast 2018* to be held in Cairo, Egypt during 24<sup>th</sup>-28<sup>th</sup> November 2018.

## **SCHOLARSHIPS/AWARDS**

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- GATE Scholarship received during Ph. D programme at NIT Rourkela from 2009 to 2012.

## **WORKSHOPS/SHORT TERM COURSE/TRAINING ATTENDED/CONDUCTED**

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<b>Year</b>	<b>Topic</b>	<b>Place</b>	<b>Duration</b>
2017	Advanced Engineering Optimization through Intelligent Techniques	NIT Surat	06-10 <sup>th</sup> February
2016	Recent Advances in Earthquake Geotechnical Engineering	IIT Bhubaneswar, India	30 <sup>th</sup> November

<b>Year</b>	<b>Topic</b>	<b>Place</b>	<b>Duration</b>
2016	6 <sup>th</sup> Asia Pacific Ministerial Conference on Housing and Urban Development (APMCHUD)	Vigyan Bhawan, New Delhi, India	14 <sup>th</sup> – 16 <sup>th</sup> December
2015	Assessment and Mitigation of Liquefaction Hazards for Seismic Microzonation	Indian Institute of Technology Roorkee, India	27 <sup>th</sup> – 28 <sup>th</sup> November
2015	Solid Waste Management-Challenges and Opportunities	Indian Institute of Technology Guwahati, India	12 <sup>th</sup> – 14 <sup>th</sup> January
2014	Pedagogy and E-learning Technology	National Institute of Technology Rourkela, India	1 <sup>st</sup> - 5 <sup>th</sup> July
2013	Use of Non-conventional/Modern Materials in Civil Engineering Construction Projects	IGIT Sarang, India	2 <sup>nd</sup> - 14 <sup>th</sup> December
2013	Conclave-2013	Empirical Hotel, Bhubaneswar, India	17 <sup>th</sup> May
2013	Advances in Water Resources Engineering	Synergy Institute of Engineering & Technology, Dhenkanal, India	22 <sup>nd</sup> April
2008	FLAC 3D	Goa, India	28 <sup>th</sup> – 30 <sup>th</sup> September

### **IMPORTANT SEMINAR TALKS**

- Demonstrated a presentation on Slope Stability Analysis using STABL-WV and FLAC (Slope) software in the short-term course on “*Design and Management of Ash Dykes*” conducted at NIT Rourkela from 8<sup>th</sup> -12<sup>th</sup> February 2007.
- Demonstrated a presentation on Slope Stability Analysis using STABL-WV and FLAC (Slope) software in the short-term course on “*Management and Design of Ash Dykes*” conducted at IIT Kharagpur Extension Centre, Bhubaneswar from 11<sup>th</sup> -13<sup>th</sup> February 2008.

### **COMPUTATIONAL SKILLS**

#### (i) Geotechnical Software

- Slope Stability Analysis (FLAC-Slope)
- Slope Stability Analysis (STABL-WV)
- Slope Stability Analysis (Geo Slope)

#### (ii) AUTOCAD, MS OFFICE. ORIGIN, NLREG, MATLAB

## Ph. D. THESIS GUIDED

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- Suvendu Kumar Sasmal (Joined on July, 2016): Behavior of Eccentrically Inclined Loaded Shallow Strip Foundations Resting on Granular Soil under Combined Cyclic Loading, *Continuing*.

## M. TECH THESIS GUIDED

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- Khan Mohammedali Asgarali (2015): Effect of lime and fly ash on Cation Exchange Capacity (CEC) and Unconfined Compressive Strength (UCS) of Soils
- Regoti Mahendar (2015): Ultimate Bearing Capacity of Strip Footing on Granular Soil under Eccentrically Inclined Load - A Numerical Approach
- Abhsihek Kumar (2016): Strength Characteristics of Lime-Treated Pond Ash towards Mine Void Filling
- Shubham Rajput (2016): Effect of Void on the Ultimate Bearing Capacity of Eccentrically Loaded Shallow Strip Footing on Granular Soil
- Bindushree Panda (2016): Optimised Proportion of Recycled Concrete Aggregates (RCA) and Blast furnace Slag as Granular Sub-Base (GSB) Material in Pavement
- Vamsi Alla (2017): Feasibility Study of Fly Ash-Bentonite Mixture as an Alternate Liner Material
- Vikrant Patel (2017): Evaluation of Oblique Pullout Capacity of Inextensible Reinforcement using Non-Linear Pasternak Model
- Debasish Kanhar (2017): Behaviour of Surface Strip Footing on Soft Soil Subjected to Eccentric and Inclined Load

## CONSULTANCY PROJECTS

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Sl. No.	Project Title	Client	Duration	Status
1	Geotechnical and Chemical Characterization of the Fly Ash and Pond Ash Samples from TTPS, Talcher	TTPS Talcher	03 months	Completed
2	Geotechnical and Geoenvironmental Characterization of the Process Plant Waste, Refuse Slag from BSP, Pond Ash, Bottom Ash Samples from NSPCL Bhilai, Chhatisgarh	NSPCL Bhilai	06 months	Completed
3	Development of an Alternate Liner	Aditya	06 months	Completed

	Material by Blending of Natural Soil, Bentonite and Coal Ash in Coal Ash Disposal System in Aditya Aluminium, Lapanga, Odisha	Aluminium, Lapanga		
4	Design of Coarse Filters based on the Approved Sand Filter	NTPC Darlipali	03 months	Completed
5	Third Party Environmental Audit for Issue of “No Increase in Pollution Load” Certificate to the Project Proponent for Changes in Plant Configuration and Product Mix for Aditya Aluminium, Lapanga, Odisha for 2017 – 2018.	Aditya Aluminium, Lapanga,	03 months	Continuing

## **COURSES TAUGHT**

### ***Under Graduate:***

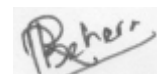
- Geotechnical Engineering: 3<sup>rd</sup> Semester
- Civil Engineering Materials & Construction: 3<sup>rd</sup> Semester
- Engineering Mechanics: 2<sup>nd</sup> Semester
- Surveying: 5<sup>th</sup> Semester
- Foundation Engineering: 7<sup>th</sup> Semester
- Ground Improvement Techniques: 8<sup>th</sup> Semester
- Construction Planning & Management: 8<sup>th</sup> Semester
- Engineering Drawing Laboratory: 1<sup>st</sup> Semester
- Building Drawing Laboratory: 3<sup>rd</sup> Semester
- Surveying Field Work: 4<sup>th</sup> Semester
- Fluid Mechanics Laboratory: 3<sup>rd</sup> Semester
- Product Development Laboratory: 5<sup>th</sup> Semester

### ***Post Graduate:***

- Environmental Geotechnics: 1<sup>st</sup> Semester
- Foundation Engineering Design Practice: 2<sup>nd</sup> Semester

## **DECLARATION**

I hereby declare that all the information above is complete & true to the best of my knowledge.



Date: 22.03.2018

**(Dr. Rabi Narayan Behera)**