

# IGS-Chennai 2015

SIXTH INTERNATIONAL GEOTECHNICAL SYMPOSIUM

ON

DISASTER MITIGATION IN SPECIAL GEOENVIRONMENTAL CONDITIONS

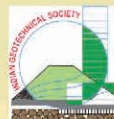
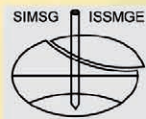
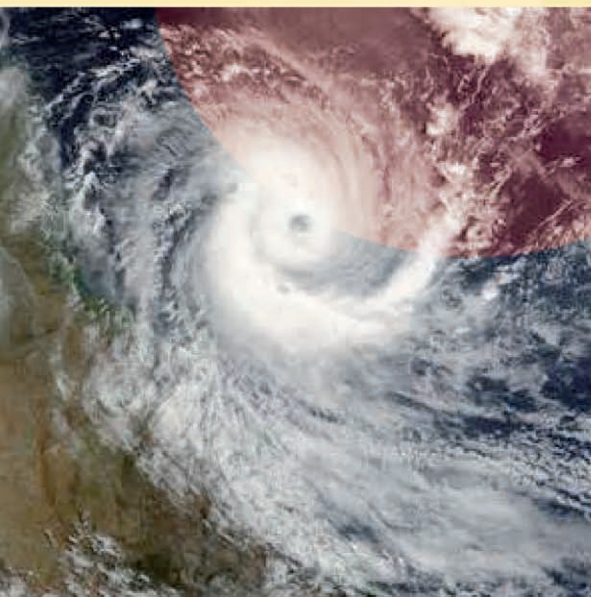
January 21-23, 2015, IIT Madras, Chennai, India

## **Organised by**

Indian Institute of Technology Madras  
Indian Geotechnical Society, Chennai Chapter  
Indian Geotechnical Society, Bangalore Chapter and  
Indian Geotechnical Society, Kochi Chapter

## **With support of**

Asian Technical Committee on  
Geotechnology for Natural Hazards (ATC -3) of ISSMGE



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Web - [www.igschennai.in/6igschennai2015](http://www.igschennai.in/6igschennai2015)

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## **01 INTRODUCTION**

The Sixth International Geotechnical Symposium, IGS-Chennai 2015, on Disaster Mitigation in Special Geoenvironmental Conditions is organized by Indian Institute of Technology Madras and Indian Geotechnical Society, Chennai Chapter, with the support of Asian Technical Committee on Geotechnology for Natural Hazards (ATC-3) of ISSMGE. The associating organizations are IGS Bangalore Chapter and IGS Kochi Chapter.

India has extensively developed its infrastructures in the recent years maintaining the balance between the nature and development. There have been natural disasters, some of them accelerated by these developments, leading to the formation of Ministry of Earth Sciences and National Disaster Management Authority of India (NDMA) by Government of India. NDMA has done laudable services since then.

The symposium focuses on issues related to geotechnical aspects of disaster mitigation and control, providing a global perspective on current events and apprehension in the industry. It is sixth in the series of earlier conferences which was organized in various cities of Asia and Europe, including Incheon, South Korea (2013); Khabarovsk, Russia (2011); Harbin, China (2009), Yuzhno-Sakhalinsk, Russia (2007); Astana, Kazakhstan (2005).

India, having wide varieties of natural features associated with uncertainty in monsoon winds and sudden fault movements, is highly prone to natural disasters. Droughts, floods, cyclones, landslides and earthquakes are the major types of disaster phenomena occurring in the region. Innumerable casualties and loss in public properties during recent events, such as Sikkim earthquake (2011) or cloud burst in Uttarakhand (2013), warrant the relevance of the symposium.

The symposium is organised at Chennai, a southern metropolis, situated on the eastern coast of India. The city is well connected with the rest of the world by an international airport. A good mixture of tradition and trendy culture, Chennai is currently a centre of many major infrastructure projects such as construction of underground metro, modernisation of airports and harbour facilities, highway projects etc.





## **02 ORGANISATION**

### **Indian Geotechnical Society Chennai Chapter**

INDIAN GEOTECHNICAL SOCIETY, IGS, was established in 1948 with the purpose of advancement and dissemination of knowledge in different fields of geotechnical engineering. The Madras Chapter of IGS was established in 1987 and later named as Chennai Chapter. Chennai Chapter ([www.igschennai.in](http://www.igschennai.in)) has more than 900 life members including about 120 members of parent body. The chapter has been organizing seminars and symposiums every year with emphasis on field practices. The National Conference IGC-1983 was held at IIT Madras. The Chennai Chapter conducted IGC-1996 at Anna University and IGC-2006 at IIT Madras. The Chapter also organised the 4th Indian Young Geotechnical Engineers Conference (4IYGEC) on May 17-18, 2013 at IIT Madras.

### **Indian Institute of Technology, Madras**

Indian Institute of Technology Madras ([www.iitm.ac.in](http://www.iitm.ac.in)), one among the foremost institutes of national importance in higher technological education, basic and applied research, was established in 1959. IIT Madras is a residential institute with nearly 550 faculty members, 8000 students and 1250 administrative and supporting staff and is a self-contained campus located in a beautiful wooded land of about 250 hectares. It has established itself as a premier centre for teaching, research and industrial consultancy in the country.

## **03 ASSOCIATING ORGANISATIONS**

### **Indian Geotechnical Society Bangalore Chapter**

IGS Banaglore Chapter (earlier named as Karnataka Geotechnical Centre, KGC) is one of the dynamic local chapters of IGS and it was established in 1964 at Bangalore. The society has eminent geotechnical engineers including scientists from the prestigious institutes such as Indian Institute of Science (IISc) and Bangalore University. Currently it has 145 active members. KGC has organized several national and international conferences and workshops including Indian Geotechnical conference in 1995 and 2008, and ISSMGE Young Geotechnical Engineering Conference.

### **Indian Geotechnical Society Kochi Chapter**

IGS Kochi Chapter is one of the youngest chapters of Indian Geotechnical Society (IGS) established in 2009. IGS Kochi Chapter enables professionals in the state of Kerala to keep abreast of latest technologies by arranging technical lectures, seminars, workshops and site visits. The society has eminent geotechnical engineers as members and has grown to strength of over 120 Life members within three years. Though one of the youngest, the chapter has been vested with the honour of hosting the prestigious annual conference IGC-2011.



## **04      THEME**

### **DISASTER MITIGATION IN SPECIAL GEOENVIRONMENTAL CONDITIONS**

#### **SUB THEMES**

##### **1. Geotechnical Problems related to Natural Hazards**

- o Advances in Geotechnical Earthquake Engineering
- o Liquefaction Analysis and Mitigation
- o Ground Improvement for Seismic Hazards
- o Dynamic Analysis of Foundations and Retaining Walls
- o Stability of Slopes and landslides
- o Underground Space for Infrastructure

##### **2. Geoenvironmental Technology**

- o Recent Advances in Geoenvironmental Site Characterization
- o Hydraulic Properties and Hydrology of Waste Containment Systems
- o Reuse of Waste and Recycled Materials
- o Advances in Heavy Metal Soil Treatment
- o Geotechnics of Sediment Remediation and radioactive waste products
- o Design of Landfill
- o Case Histories in Geoenvironmental Engineering: Challenges and Innovation

##### **3. Field Instrumentation and Monitoring**

- o Advances of In-situ Testing Technologies
- o Shear Wave Velocity Measurements using Surface Wave Methods
- o Advances in Sensing/Monitoring Techniques during Geoconstruction

##### **4. Geotechnology under extreme environment**

- o Polar and Frozen Soil Engineering
- o Estuary, Dams, and Coastal Erosion
- o Tsunami: Prediction and Modelling

## **05      ABSTRACT & OFFICIAL LANGUAGE**

The official language of the Symposium is English and papers shall be written and presented in English. Abstract not exceeding 300 words shall be submitted by e-mail to [6igs.chennai2015@gmail.com](mailto:6igs.chennai2015@gmail.com) on or before 30th April 2014.

## **06 ORGANISING COMMITTEE**

Chairman	:	Prof. A. Boominathan, IIT Madras
Co-Chairman	:	Prof. R. G. Robinson, IIT Madras
Secretaries	:	Dr. Subhadeep Banerjee, IIT Madras Prof. H. N. Ramesh, UVCE, Bangalore Dr. Anil Joseph, IGS Kochi
Treasurer	:	Dr. M. Muttharam, Anna University, Chennai

### **GENERAL AFFAIRS:**

Mr. I. V. Anirudhan, Geotechnical Solutions, Chennai  
Dr. T. Thyagaraj, IIT Madras

## **07 TECHNICAL COMMITTEE**

Chairman	:	Prof. P. V. Sivapulliah, IISc, Bangalore
Co-chairman	:	Prof. V. K. Stalin, Anna University, Chennai.
Members	:	Dr. V. Balakumar, Simplex Infrastructure, Chennai Dr. S. K. Prasad, SJCE, Mysore Dr. G. Madhavi Latha, IISc, Bangalore Dr. K. Premalatha, Anna University, Chennai Dr. G. R. Dodagoudar, IIT Madras Dr. V. B. Maji, IIT Madras Dr. A. Dali Naidu, IIT Madras Prof. Benny Abraham, CUSAT, Kochi Mr. S. Suresh, Associated Structural Consultants, Kochi Dr. Kumar Pitchumani, AECOM, Chennai Mr. Hari Krishna, Keller Ground Engineering India, Chennai Dr. C. V. Prasad, Geomarine Consultants, Chennai Mr. Jason Samuel, L&T Infrastructure, Chennai Dr. G. Janardhanan, NITTTR, Chennai Dr. K.S. Beena, CUSAT, Kochi Dr. Sobha Cyrus, CUSAT, Kochi



## **08 ADVISORY COMMITTEE**

### **INTERNATIONAL**

Prof. Ikuo Towhata, Tokyo University, Japan, Vice President of ISSMGE for Asia.  
Prof. Askar Zhussupbekov, Eurasian National University, Astana, Kazakhstan,  
Immediate Past Vice President of ISSMGE for Asia  
Prof. Motoki Kazama, Tohoku University, Japan, Chairman, ATC-3  
Prof. A. T. Bekker, Far Eastern Federal University, Vladivostok, Russia  
Prof. Eun Chul SHIN, University of Incheon, South Korea  
Prof. F. H. Lee, National University of Singapore, Singapore  
Prof. C. F. Leung, National University of Singapore, Singapore  
Prof. Buddhima Indraratna, University of Wollongong, Australia  
Prof. V. I. Ilychiev, President of Russian Geotechnical Society, Russia  
Prof. Tomasz Kozłowski, Kielce University of Technology, Poland  
Prof. Vladimir Paramonov, St. Petersburg State Transport University, Russia  
Prof. Tadatsugu Tanaka, Japan Association of Rural Resource Recycling Solutions, Japan  
Prof. Namir K.S. Al Soudi, Embassy of Iraq in Australia, Iraq  
Prof. V. N. Paramonov, St. Petersburg State Transport University, Russia  
Dr. Srikanth Venkatesan, University of Victoria, Melbourne, Australia  
Prof. Sergey Kudryavtsev, Far Eastern State Transport University, Khabarovsk, Russia  
Prof. V. P. Petrukhin, NIIOSP, Moscow, Russia  
Prof. H. Ling, Columbia University, New York, USA  
Prof. Hemanta Hazarika, Kyushu University, Japan  
Prof. T. Kokusho, Chuo University, Japan  
Prof. Mamoru Mimura, Kyoto University, Japan  
Prof. S. Yasuda, Tokyo Denki University, Japan  
Prof. R. A. Mangushev, SPBGASU, Saint-Petersburg, Russia  
Prof. Krishna R.Reddy, University of Illinois at Chicago, USA  
Prof. Kyle M. Rollins, Brigham Young University, USA  
Prof. L.R. Stavnitzner, NIIOSP, Moscow, Russia  
Prof. Zhao Maocai, Harbin Institute of Technology, China  
Prof. Christos Vrettos, TU Kaiserslautern, Germany

### **NATIONAL**

Prof. G. N. Gandhi, President, IGS, New Delhi  
Prof. K. S. Rao, IIT Delhi (Immediate past president, IGS)  
Prof. M. R. Madhav, Past Vice President, ISSMGE  
Prof. S. V. Ramaswamy, Anna University, Chennai  
Er. Jai Bhagwan, Hon. Secretary, IGS, New Delhi  
Prof. Babu T. Jose, AISAT, Kochi  
Prof. S. R. Gandhi, IIT Madras  
Prof. K. Rajagopal, IIT Madras  
Prof. K. Ilamparuthi, Anna University, Chennai  
Prof. T. G. Sitharam, IISc, Bangalore  
Prof. G. L. Sivakumar Babu, IISc, Bangalore  
Dr. B.K. Bansal, Ministry of Earth Sciences, New Delhi.  
Prof. Chandan Ghosh, NIDM, New Delhi.  
Mr. M. D. Nair, IGS, Kochi

### 09 VENUE

IC & SR Auditorium,  
Indian Institute of Technology Madras, Chennai 600036.

### 10 IMPORTANT DATES

Receipt of abstracts not exceeding 300 words	30 April 2014
Acceptance of abstracts (300 words)	31 May 2014
Receipt of full length Paper (4 A4 size pages)	31 July 2014
Tentative acceptance of full length paper	31 August 2014
Author registration for the symposium (last date)	31 October 2014
Final acceptance of the paper	31 October 2014
Registration of other delegates (last date)	16 January 2015
Symposium dates	21-23 January 2015
Technical and heritage tours	24 -25 January 2015

### 11 REGISTRATION FEE

	Upto 31-Oct 2014	After 31 Oct 2014
<b>Foreign Delegates</b>		
ISSMGEMembers & Authors	350 USD	400 USD
International Students	200 USD	200 USD
Accompanying Spouse	200 USD	200 USD
Other International delegates	400 USD	450 USD
<b>Indian Delegates</b>		
IGS Members & Authors from India	4500 INR	5000 INR
Students from India (PG and above)	2000 INR	2000 INR
Accompanying Spouse (India)	2000 INR	2000 INR
Others from India	5000 INR	5500 INR

#### Registration benefits:

The registration fees include access to all technical sessions, lunches, coffee breaks, reception, banquet, cultural events, technical tour as well as symposium proceedings.

### 12 ADDRESS FOR CORRESPONDENCE

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