G.S. Mandal's
Marathwada Institute of Technology, Aurangabad.

Civil Engineering Department

SCHEDULE OF SESSIONS

DAY/TIME	I 10:30 - 11:30	II 11:30 – 12.30	III 12.30 – 1:30
23rd August (Day1)	 Inauguration & Keynote lecture **Bearing Capacity of Shallow Foundations in Jointed Rock Masses** President IGS Dr. N.K. Samadhiya IIT Roorkee	 **Sustainability in Geotehnics** Dr. G.L. Shivkumar Babu IISc Bangalore	 **Bioimmobilization of Heavy Metals in Sands** Dr. Neelima Satyam IIT Indore
24th August (Day2)	 **Advanced Versions of Ground Improvement Techniques** Dr. S.S. Basarkar AFCONS Infra Ltd, Mumbai	 **Determining Depth of unknown Foundation by NDT Techniques** Er. Ravi Sundaram Director, Cengrs Geotechnica Pvt Ltd, Noida	 **Tunneling in Rock: New Insights** Dr. Ashish Juneja IIT Bombay

25th August (Day3)	 **Review of Popular Methods for testing of pile foundation Worldwide** Er. Ravi Kiran Vaidya Geo Dynamics, Vadodara	 **Design and Analysis of Pile Foundations for Supporting Machine Foundation** Dr. Jaykumar Shukla Geo Dynamics, Vadodara	 **Advanced Geotechnical Testing for Infrastructure** Er. Ramesh Kulkarni CMD, SoilTech, Pune
26th August (Day 4)	 **Role of Instrumentation in Field Testing and Monitoring of Foundations** Dr. Dasaka S. Murthy IIT Bombay	 **Quick Computation of Foundation Settlement and Empricial correlations** Dr. Chandresh Solanke SVNIT , Surat	 **Assessment of Reliability of Structures by NDT Techniques** Dr. J.D. Rathod The Maharaja Sayajirao University of Baroda
27th August (Day 5)	 **Innovative Solutions for Earth Retention :Case Studies** Er. Vikas Patil MD, Savi Infrastructure, Pune	 **Overview of Geofoam Applications in Geotechnical Engineering** Dr. Vinil Kumar Gade National Institute of Technology Andhra Pradesh	Feedback & Valedictory session

IGS Aurangabad Chapter in association with Civil Engineering department, Marathwada Institute of Technology, Aurangabad, Maharashtra successfully conducted one week STTP on the topic "Advances in Geotechnical Engineering and Reliability of Structures" from 23rd to 27th August 2021. 155 participants registered for this STTP and around 114 participants participated actively. Participants consisted of Faculty members of renowned institutions, Research scholars and UG/PG Students from Maharashtra, Gujrat, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh, Tamil Nadu, Karnataka, Haryana, Bihar, Mizoram and from neighbouring countries like Bhutan.

DAY 1 DETAILS

The one week workshop started with a formal inauguration session at 10:15 am on 23 August 2021 through the online platform of ZOOM app. This includes a welcome speech of the Convener, Dr. M.S. Dixit (HCED, MIT Aurangabad &IGS Aurangabad chapter) followed by a keynote lecture by the President IGS, Dr. N.K. Samadhiya (IIT Roorkee). The schedule of Day-1 was consisting of three sessions, each of one hour duration, between 10.30 am to 1.30 pm.

Session 1: The first session was addressed by Dr. N.K. Samadhiya (Professor, Dept of Civil Engineering, IIT Roorkee) on the title "Bearing capacity of shallow foundation in jointed rock masses". The mentioned talk was focused on strength behaviour of jointed rocks with special reference to the bearing capacity determination. Different bearing capacity failure modes were explained in various types of strata. Current status and need of further research is also discussed by Dr. N.K. Samadhiya. One of the snapshot of the session is shown in the Figure 1.

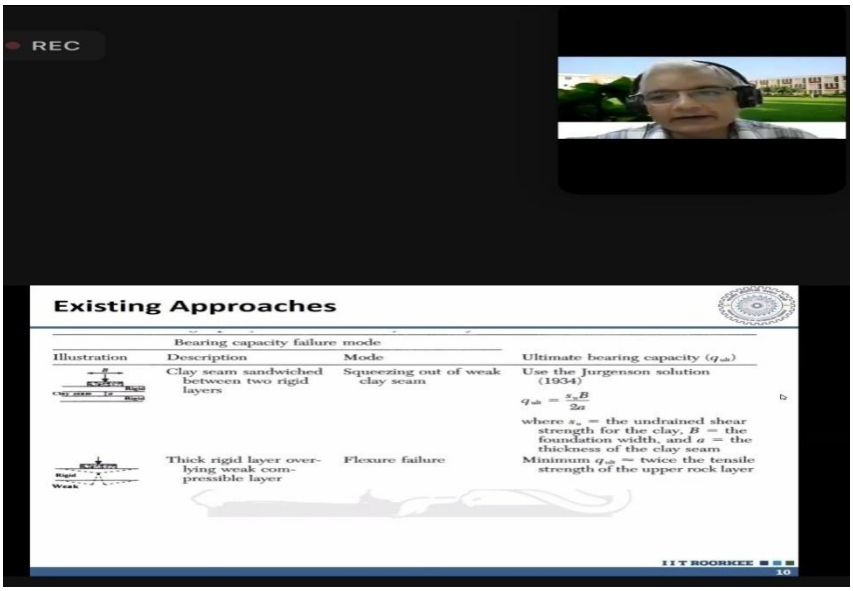


Figure 1: Dr. N.K. Samadhiya session

Session 2: The second session was addressed by Dr. G. L. Sivakumar Babu (IISc Bangalore) on the topic "Sustainability in Geotechnics. The lecture was based on various aspects of sustainability such as sustainable material, energy, construction, designs and practices. The speaker also explains various approaches towards the sustainability including soil nailing techniques. Figure 2 shows some he snapshots of the session.

Figure 2: Dr. G. L. Sivakumar Babu session

Session 3: The third session was addressed by Dr. Neelima Satyam, IIT Indore on the topic of "Bio-immobilization of heavy Metals in sand". The speaker explains the topic very nicely in the light of current research being conducted at IIT Indore. This includes the discussion on effect of Bio-cementation on shear strength based on direct shear test. Figure 3 shows some the snapshots of this session.

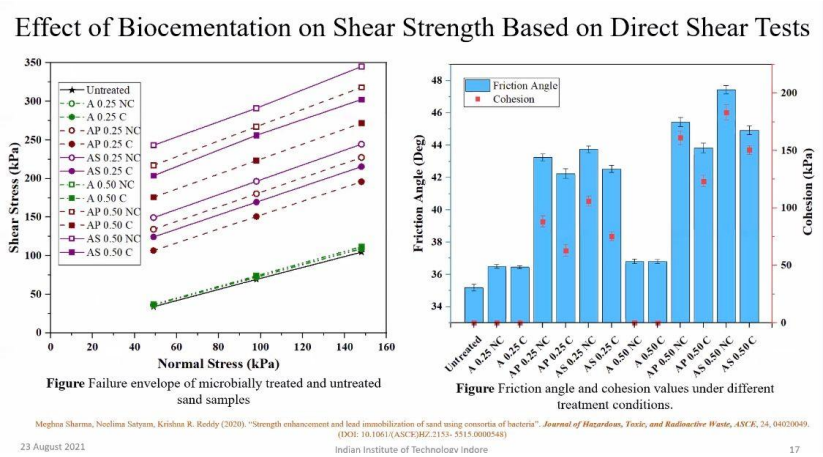
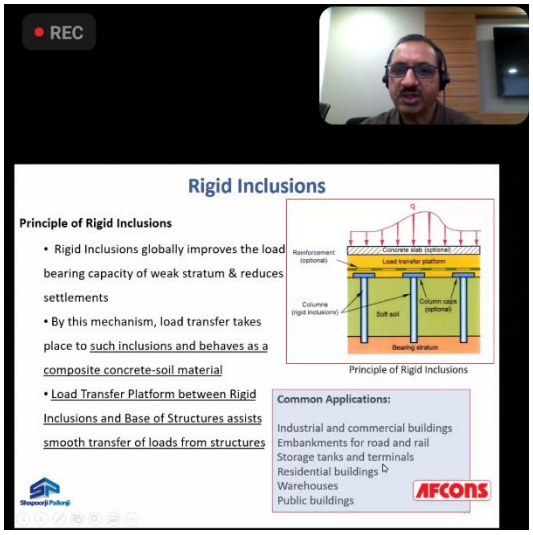


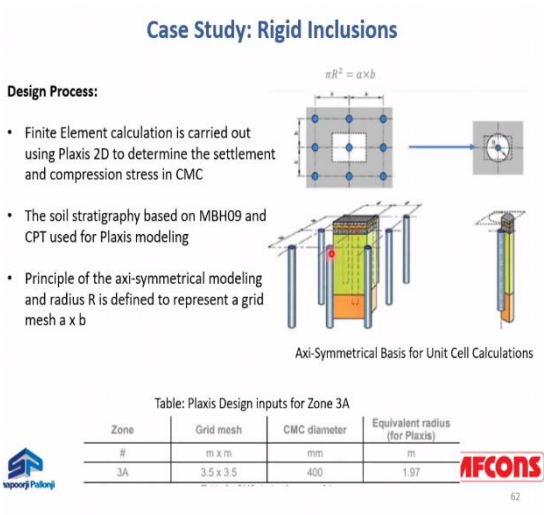
Figure 3: Dr. Neelima Satyamsession

All the talks were concluded with a question answer session. During which the participants integrated with the experts and got enlightened with the knowledge and energy of the experts.

DAY 2 DETAILS :

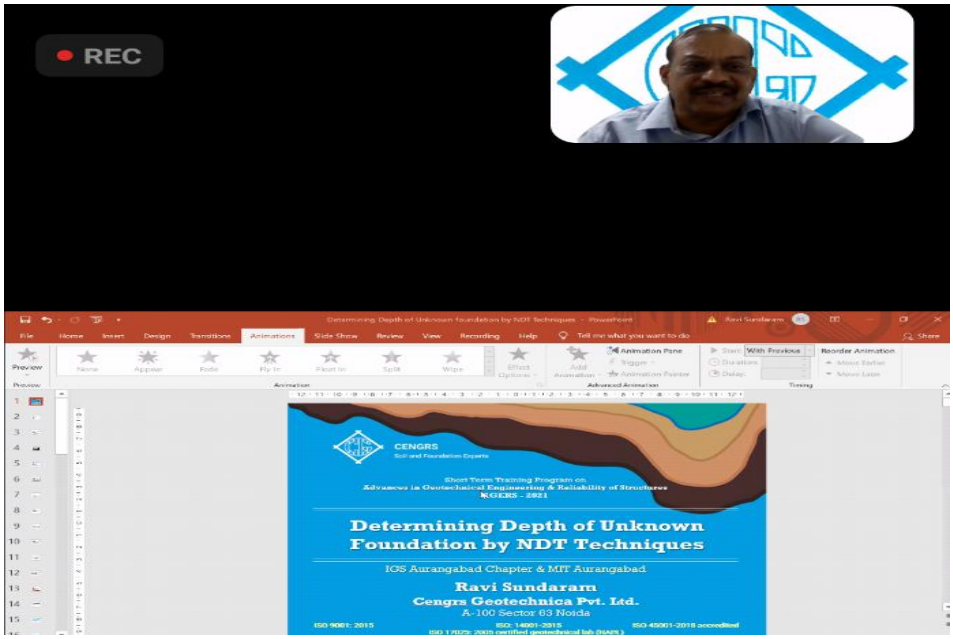
Session 1: The first session was addressed by Dr. Sunil Basarkar, AFCON Infra. Ltd. Mumbai on the topic of 'Advanced Versions of Ground Improvement Techniques'. The various ground water techniques elaborated by Dr. Basarkar were Ground Improvement by Dynamic Impact Method, Rapid Impact Compaction, Ground Improvement by Vibro Compaction Method, Ground Improvement by Deep Soil Mixing, Rigid Inclusion Method, Jet Grouting Technique, Vacuum Consolidation Technique. During the session, the speaker explained each of the method showing some figures and videos which enabled the participants to understand the concept. Also, one case study was discussed in the session. Some of the pics are inserted below.





Case Study for Rigid Inclusions

Session 2: The second session was addressed by Er. Ravi Sundaram Director, Cengrs Geotechnica Pvt. Ltd, Noida on the topic of 'Determining Depth of unknown Foundation by NDT Techniques'. The speaker mainly focussed on Sonic Echo Response/ Pile Integrity Testing and Parallel Seismic Test for elaborating the topic. It was explained the suitability of the method depending upon the type of foundation and the process for testing using NDT equipments. It was also informed that the methods can be used for new as well as existing foundations. The speaker talked about the limitations of the methods. Three case studies were discussed during the session like determining the depth of pile of a railway bridge in Delhi for deciding alignment of metro tunnel, determining the depth of well foundation of bridge over a drain, failure of piles in factory building in Bahadurgarh.



Session 3: The third session was addressed by Dr.Ashish Juneja, IIT, Mumbai along with his research student Mr. Kota Vijay on the topic of 'Tunnelling in rock: new insight'. The speakers mainly discussed about the classification of tunnels, methods of tunnel construction and the challenges during the construction. They explained the major activities while driving the tunnel such as drilling, blasting, mucking and ground support. Simultaneously they discussed about drilling and blasting methods.

Dr. Ashish Juneja Delivering a lecture

DAY 3 DETAILS:

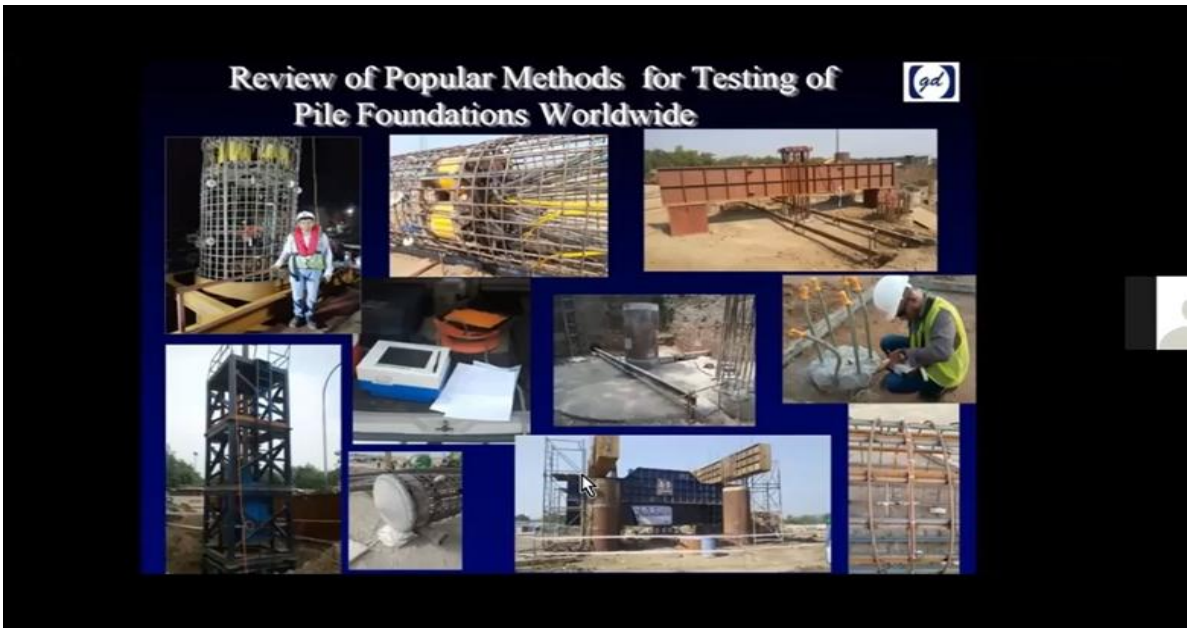


Figure 1:Mr. Ravikiran Vaidya session

Session 1: The first session was addressed by Er. Ravikiran Vaidya (Principal Engineer ,Geo Dynamics (India)) on the title "Review of popular methods for testing of pile foundations worldwide". He addressed the topic of pile foundation for infrastructural growth of India. He discussed about old as well as current testing methods required for pile foundation. He discussed different tests such as low strain integrity method, Thermal integrity profiling, Bi-directional/O-cell evolution system.

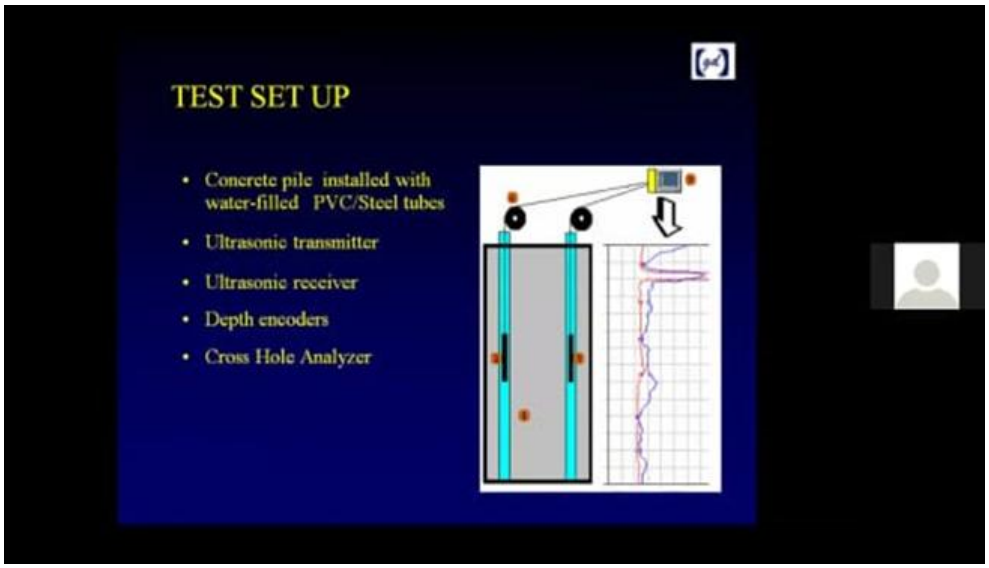


Figure 2:Er. Ravikiran Vaidya session

Session 2: The second session was addressed by Dr. Jaykumar Shukla (Principal Engineer, Geodynamics) on the topic "Advances in Geotechnical Engineering and Reliability of infrastructures). He addressed the working of machine foundation with different types of foundation

such as raft, pile foundation as per the soil strata available on site. He spoke about shear modulus, large and small strains, standard penetration test as per ASCE07. For testing of pile foundations, he explained current as well as advanced methods in very detailed way with practical example executed on site as mentioned below,

1. Inspection of bored piles
2. Importance of testing of essential data like soil investigation and more which helps to use proper and exact methods of pile foundation.
3. Detailed explanation of testing using advanced equipment like pulse echo which gives detailed output report in graphical views & results.

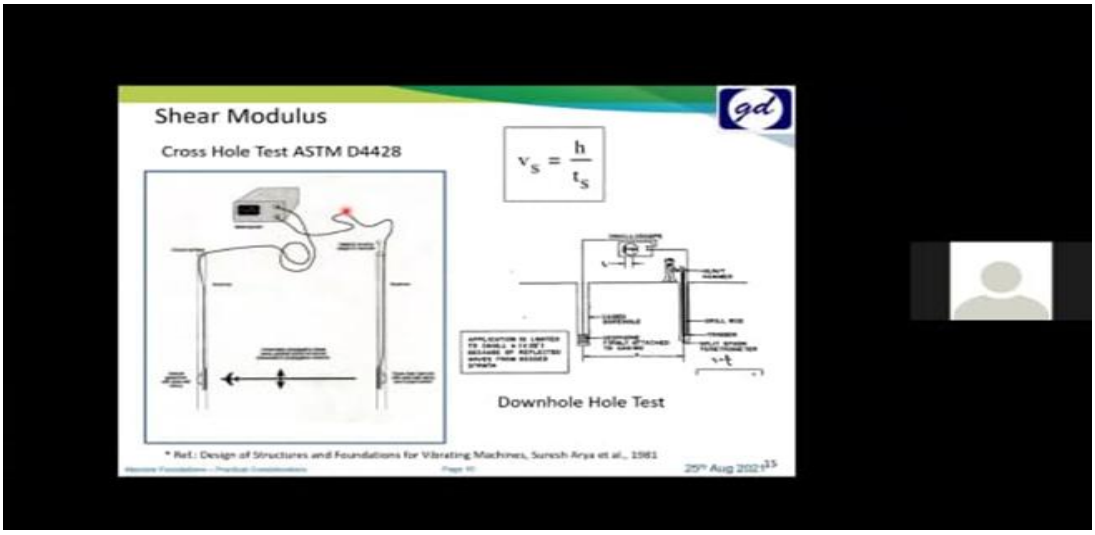


Figure 3:Dr. Jaykumar Shukla Session

Session 3: The third session was conducted by Mr. Ramesh Kulkarni (Director, Kulkarni & Associates Soil Tech) on topic Advanced Geotechnical testing for Infrastructure having huge experience in geotechnical testing's. He explained the investigation of bridge of Rail Vikas Nigam Limited which constructed 110 Km tunnel joined by bridges. He discussed about regional geology of Uttarakhand, Lab test conducted on rocks, Bore hole televiewer and Methods of stress determination.

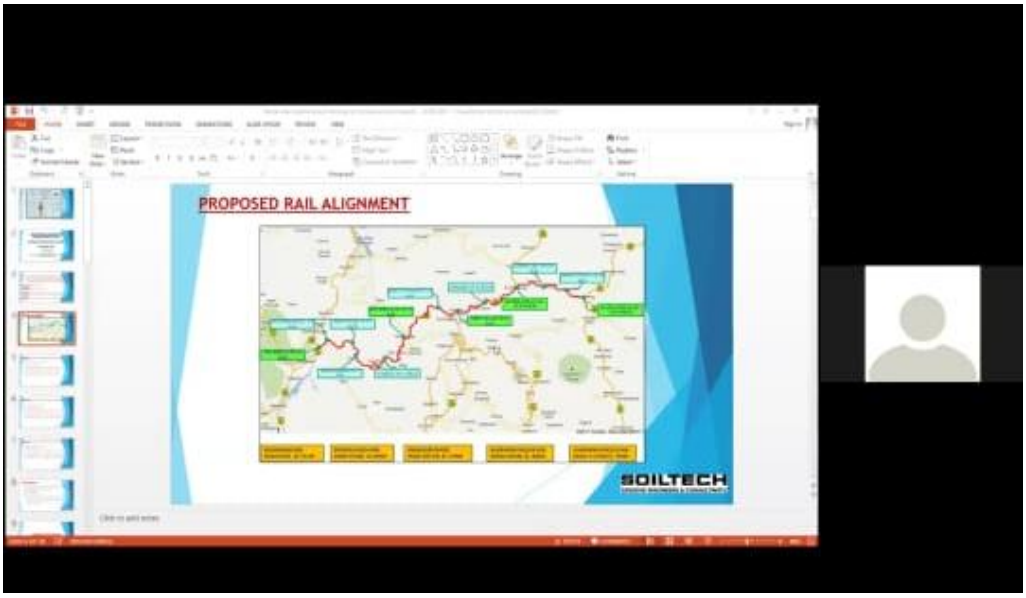
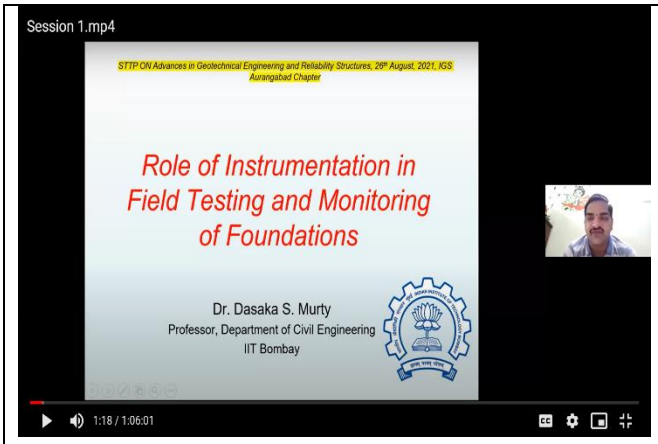
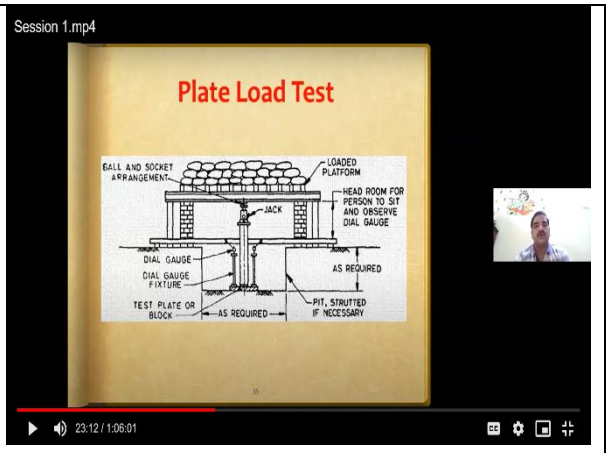


Figure 3: Mr.Ramesh Kulkarni

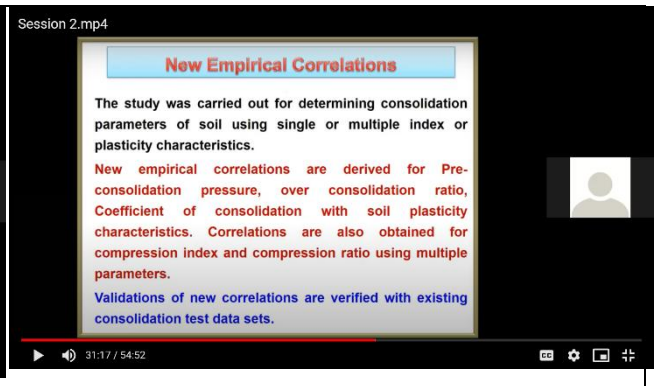
DAY 4 DETAILS:

Session I was conducted by Dr. Dasaka S. Murthy, IIT Bombay. He delivered his session of "Role of Instrumentation in Field Testing and Monitoring of Foundations". He discussed the design criteria and Settlement associated with foundations. He elaborated the procedure and instrumentation techniques implied in plate load test. How load is applied on Pile for testing the load capacity of Pile was discussed at length.

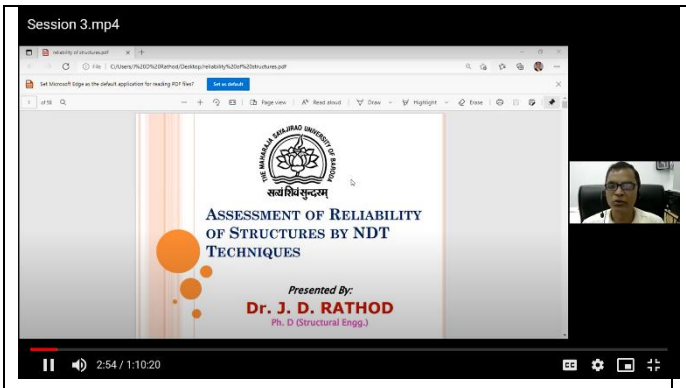


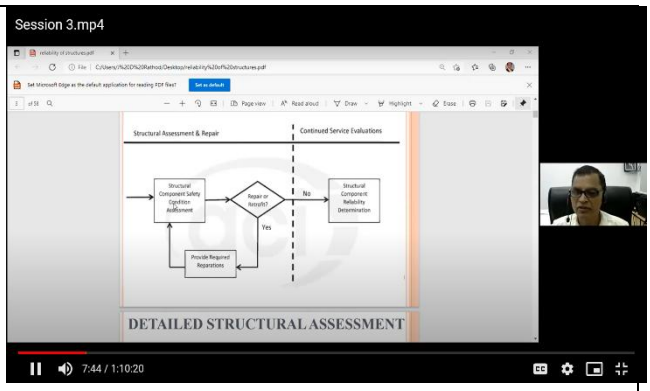


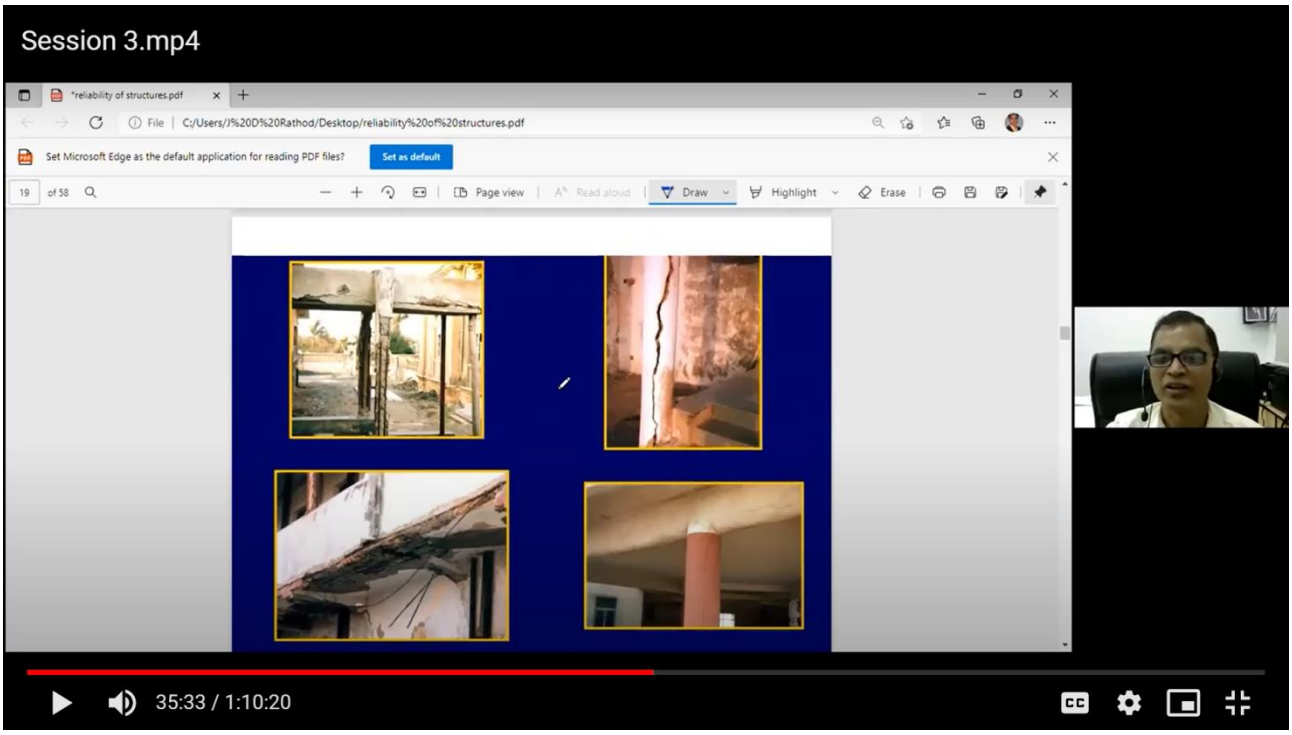
Session II was conducted by Prof. C H Solanki, Civil Engineering Department, Sardar Vallabhbhai National Institute of Technology, Surat, Gujrat. His topic was "Quick Computation of Foundation Settlement and new empirical correlations". He observed that the reliability of test performed on soil is poor due to sampling disturbances. He proposed new empirical correlations for alluvial deposits including validation and empirical model for foundation settlement of alluvial deposits.



Session III was conducted by Dr. J.D. Rathod on the topic "Assessment of Reliability of Structures by NDT Techniques". According to him, Detailed Structural Assessment consists of a) Structural assessment and repair. b) Continued service evaluation. He discussed the parameters that are related to deterioration of Reinforced Concrete Structures. Later he elaborated to Performance and Integrity tests performed on RCC elements.

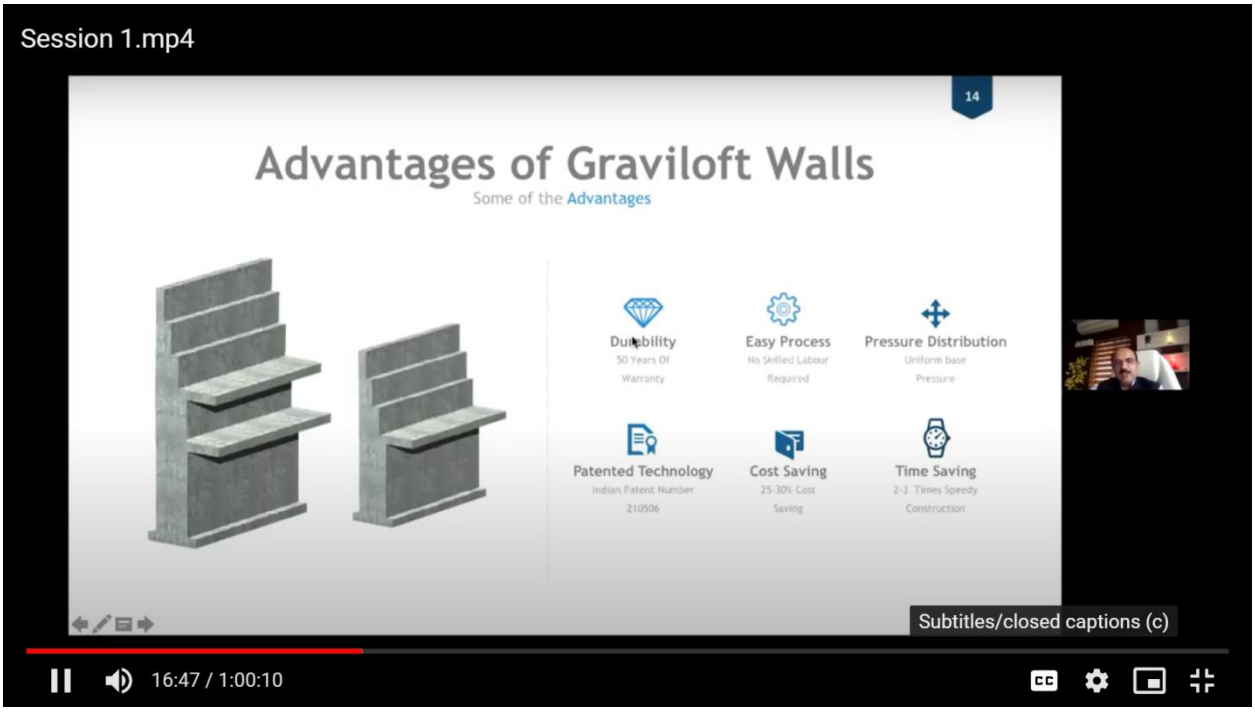






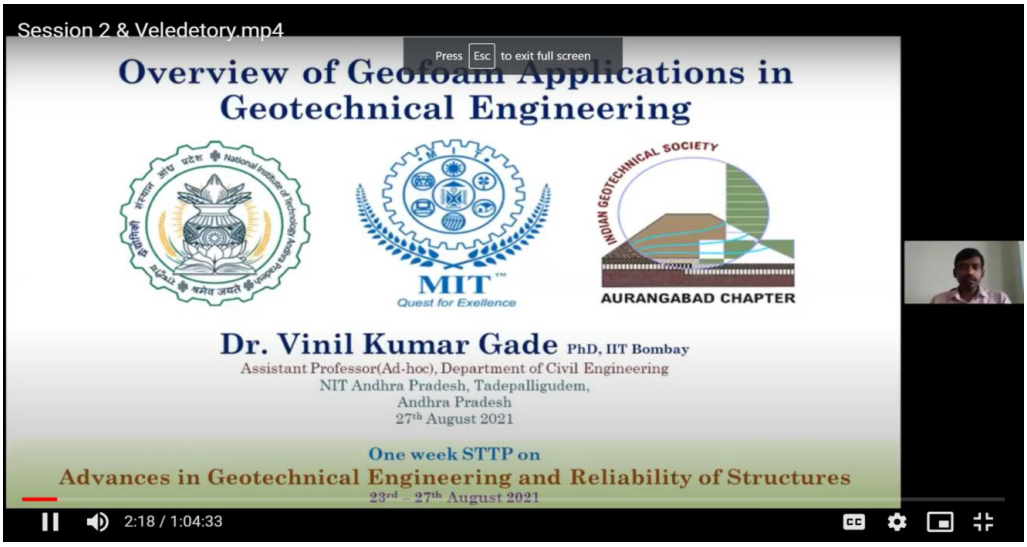
DAY 5 DETAILS:

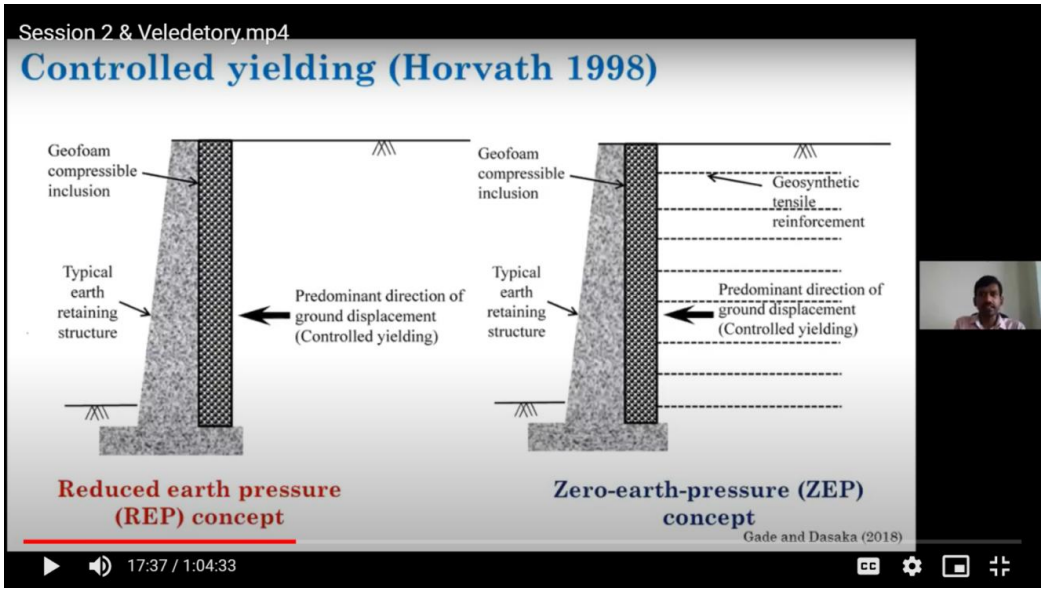
In first session, Savi Infrastructure's-Pune Er. Vikas Patil have discussed 'Innovative solutions for earth retentions and case studies' by using his patented 'Graviloft Technology'. He concluded that – space saving and cost saving in Graviloft retaining wall is more as compared to conventional retaining wall. The overall project cost can be reduced upto 25 to 35 % as compared to conventional retaining wall. He also discussed the advanced controlled yielding techniques implementation practically by showing field videos.



In second session, Dr. Vinil Kumar Gade have discussed an ‘overview of Geofoam Applications in Geotechnical Engineering. In continuation with Horvarth conclusion, He told that Geofoam helps in reduction of earth pressure and maintains controlled yielding. He also discussed the applications of Geofoam Box culvert, approach fill, bridge abutments, embankments, pipelines and buried structures. He also discussed the intangible benefits of Geofoam like speed in construction, long term durability, no utility replacement, placement in adverse conditions with consistent material properties, etc. Due to economical and effective technical advantages of Geofoam, he concluded that – Geofoam can be used us a future and feasible solution in geotechnical engineering field. Questions raised by participants were answered satisfactorily by the eminent speakers.

In valedictory session, some of participants have shared their overall feedback about the one week STTP. Vote of Thanks were done by Prof. S. G. Quadri, Joint Secretary IGS Aurangabad Chapter. The organizing committee of the STTP took efforts in successful completion of the event.





Dr. Manish S. Dixit
HCED (MIT) |Hon. Secretary,
IGS Aurangabad Chapter