



REPORT

3rd International E-Conference on Mathematical, Physical and Computational Sciences

Introduction:

The problems or issues spanning areas of Science, Engineering and humanities emerging from natural systems can be solved using the concepts from Mathematics, Statistics, Physics & Electronics and Computational Science. The conference aims at preserving the theory and laboratory forms of traditional education along with developing a non-traditional approach of Scientific Computing that supports solving problems from both science and engineering. The aspects and predictions of scientific and non-Scientific events can be proposed and understood with the help of Mathematical & Computational Models. The necessity to conduct a conference in such an important area is felt to bring all concurring minds from academia and Industry to expand the knowledge horizon by exchanging the ideas from various fields beyond our respective areas of interest which creates a multi-disciplinary thought process. Aurora's Degree & PG College is organizing the conference in association with Andhra Pradesh and Telangana Society for Mathematical Sciences.

Objective:

- To provide a platform for interaction between academicians, Industry and researchers all over the world.
- This gives an opportunity to exchange the ideas towards updating the knowledge.

Organisers: Departments of Mathematics, Physics, Electronics, Statistics and Computer Science of Aurora's Degree and PG College in Collaboration with Andhra Pradesh and Telangana Society for Mathematical Sciences (APTSMS).

Target Audience: Research Scholars, Academicians and Students.

Dates: 27th and 28th August 2021.

Venue: Online Conference

Platform: Microsoft Teams.

Execution:

Back Ground work /Preliminaries: The theme of the conference for finalized by all the departments together. The theme was selected in a manner that it would benefit the researchers with the latest and advanced trends in various fields of Mathematics, Physics, Electronics,

Statistics and Computer Science. Later a proposal was prepared by Dr. Meera Joshi, Department of Mathematics and the suggestions from all the department heads and the members were incorporated. Dr. Meera Joshi and Ms. Chandrakala along with the heads decided to approach a professional body like APTSMS for organizing the conference in collaboration with them. Meanwhile Ms. Chandrakala, Department of Mathematics initiated the process of contacting the APTSMS secretary Prof. D. Bharathi, Department of Mathematics, SV University, Tirupathi and the president Prof. E. Keshava Reddy, Department of Mathematics, JNTU Ananthapur, Ananthapuramu. The proposal was mailed to the secretary and the president of APTSMS 29th January 2021 along with a letter requesting their collaboration signed by Principal, Aurora's Degree & PG College. The APTSMS informed that they are positive about the proposal but they can confirm the collaboration only in the month of February under the condition that if no University applies for collaboration. Ms. Chandrakala & Dr. Meera Joshi were following up APTSMS for their approval. There was a delay for their side in giving the approval. The approval was finally given on 19th April 2021. The advisory board was finalized together by all the departments of Mathematical Sciences. The speakers from India and abroad were contacted by all the departments and a confirmation was received from them. Dr. W.G. Samanthi Konarsinghe, Academic Director, Statistical Consultant, Institute of Mathematics and Management, Sri Lanka agreed to be the key note speaker. Then the first draft of the brochure was prepared by Mr. Vishnu the designer of Aurora's Degree & PG College. A meeting of the heads Ms. G. Prathibha, head, Department of Mathematics, Ms. K. Parimala Sudhir, head, Department of Mathematics, Ms. C. Aruna, head, Department of Physics & Electronics, Ms. B. Rajani, head, Department of Computer Science and the conference organizing Secretaries Dr. Meera Joshi & Ms. Chandrakala was held with the Vice-principal Mr. Hari Prasada Rao J to finalize the modalities related to the conference. Mr. Hari Prasada Rao suggested that the full papers can be published in the college journal ANTHARMUKHA with ISSN 2348-2591. This is an effort to enroll the journal in UGC-CARE list. The final draft of the brochure was ready in the last week of April. The final draft was approved by Dr. Viswanadham Bulusu, Principal, Aurora's Degree & PG College and APTSMS council. Later it was circulated widely through mails to various academicians and some Industry contacts in India and abroad, which were available with the departments. It was also posted in whatsapp groups in which the faculty members were participants. The information was scrolled in the APTSMS website and also in Aurora's Degree & PG College website. A link was given in the brochure and the abstracts were collected through the google form. The last date for submission of abstracts was 25th June 2021. The plagiarism was checked and only those abstracts which have more than 90% Uniqueness were accepted. An acceptance mail along with the instructions to authors as required in ANTHARMUKHA was sent to each participant from the official mail conference@adc.edu.in. Totally 74 abstracts were received and 55 abstracts were accepted. The papers were divided into categories like Pure Mathematics, Graph Theory, Fluid Mechanics, Computer Science, Statistics, Physics and Electronics. There was one Keynote address and 9 invited talks in a wide range of areas from Mathematics, Physics, Electronics, Statistics and Computer Science. There were 5 International and 5 National speakers. The profiles and abstracts of the talks of the speaker along with their photos were collected for the e-Souvenir and to introduce them during the invited sessions.

Now the next phase of work related to preparing the schedule of the conference and consolidation of data for the e-Souvenir started. In context of the e-Souvenir and to invite as chief guests TSCHE Chairman - Prof. T. Papi Reddy, TSCHE Vice-Chairman - Prof. R. Limbadri, Vice-Chancellor of Osmania University – Prof. D. Ravinder, Registrar of Osmania University – Dr. P.

Laxminarayana for the inaugural and valedictory sessions of the Conference the organizing secretaries Dr. Meera Joshi and Ms. Chandrakala met them. A message was collected from towards the conference was taken from them and the same was incorporated in the e-Souvenir. The messages from APTSMS president and General Secretary, Dr. N. Ramesh Babu - Secretary Aurora Consortium and Dr. Viswanadham Bulusu, principal, Aurora's Degree & PG College were also collected for e-Souvenir.

The schedule was prepared by Ms. Chandrakala, organizing secretary of the conference. The inaugural sessions was planned in coordination with Dr. Meera Joshi, which was followed by a key note address. It was planned to have one talk by an International resource person and two talks by national resource persons in each session. These sessions were followed by parallel sessions to facilitate the authors to present their work. As the number of papers was quite good, parallel sessions were schedule as per the divisions of papers into different categories like Pure Mathematics, Graph Theory, Fluid Mechanics, Computer Science, Statistics, Physics and Electronics. It was planned to allocate for each invited talk and each parallel a chair person. The chair person was allocated in co-ordination with Prof. D. Bharathi, General Secretary APTSMS. Two types of schedules were prepared which are:

1. Complete Conference Schedule and 2. Parallel sessions schedule. These schedules helped in executing the sessions in a perfect manner without any issues. The sessions were scheduled in Microsoft Teams and links were generated for each session and the same was inserted in both the schedules. These schedules were mailed to the guests, Key note and invited speakers, Paper presenters and participants along with an invitation for the conference. Since the number of parallel sessions were more to ensure perfect execution of the planning the one faculty member

The e-Souvenir data was consolidated by Dr. Meera Joshi, organizing secretary of the conference. The Content of the e-Souvenir was planned in coordination with Ms. Chandrakala. The Content was approved by principal of Aurora's Degree & PG College, president and General Secretary of APTSMS. A skeleton for the e-Souvenir was prepared by both organizing secretaries and accepted by principal of Aurora's Degree & PG College, president and General Secretary of APTSMS. The information about each resource person along with their photo, affiliation, title and abstract of the talk were consolidated in a proper manner. The information about APTSMS executive council members and the previous National and International Conferences organized by APTSMS was gathered, updated and designed as a table for e-Souvenir. The abstracts of all the paper presenters were consolidated. The information about each author of each paper along with proper initials and affiliations was collected for e-Souvenir. The designing of the front page and the back page was taken with lot of care. The proof reading was completed before circulating the final copy. Ms. Prathibha, head, Department of Mathematics took keen interest in preparing the e-Souvenir. The plan to release the e-Souvenir during the inaugural session in a innovative manner was suggested by Mr. Hari Prasada Rao.J. vice-principal of the college.

Day 1:

The day started with the inaugural session of the conference. The organizing secretary Dr. Meera

Joshi welcomed all the guests and participants. The dignitaries who graced the occasion were Prof. N. Kishan, head, Department of Mathematics, Osmania University as chief Guest, Prof. E. Keshava Reddy, President - APTSMS, Department of Mathematics, JNTU Ananthapur, Ananthapuramu and General Secretary - APTSMS, Department of Mathematics, S. V. University, Tirupati as guest of honour and Dr. Viswanadham Bulusu, Principal, Aurora's Degree & PG College. Prof. N. Kishan addressed the participants. He spoke about the importance of Mathematics in various fields. He appreciated Aurora's Degree and PG College for organizing the 3rd International Conference on Mathematical, Physical and Computational Sciences. He also mentioned that the college is known for conducting many academic activities for the benefit of students and faculty. The e-Souvenir was released online by Prof. N. Kishan. Prof. E. Keshava Reddy and Prof. D. Bharathi, also addressed the participants and appreciated them for presenting papers. The organizing secretary Ms. Chandrakala.P rendered the vote of thanks. The inaugural session ended as per the planned schedule. After the inaugural session the key note address was delivered by Dr. W.G. Samanthi Konarsinghe, Academic Director, Statistical Consultant, Institute of Mathematics and Management, Sri Lanka on the topic "Role of Mathematical Models to Combat Covid-19 Pandemic". The key note address was followed by two invited talks. First invited talk was delivered by Prof. Venkata Sundaranand Putcha, Department of Mathematics, Rayalaseema University, Kurnool, Andhra Pradesh on "An Introduction to Chaos Based Cryptosystems". The session was chaired by Dr. V. Maheswara Rao, School of Mathematical and Computing Sciences, Fiji National University, Fiji, Australia. This invited talk was followed by an invited talk by Dr. K. Maruthi Prasad, Prof & Head, Dept of Mathematics, GITAM Deemed to be University, Hyderabad on the topic "Mathematical Modelling on an Electrically Conducting Fluid Flow to an Inclined Permeable Tube with Multiple Stenoses". The talk was chaired by Dr. V. Maheswara Rao, School of Mathematical and Computing Sciences, Fiji National University, Fiji, Australia. After the invited talk the participants were informed to disperse to their respective parallel sessions for which the links were sent already. There were 4 parallel sessions. Chair person was allocated for each session. Parallel session 1 was Chaired by Prof. G. SHOBHALATHA, Executive Council Member, APTSMS, Department of Mathematics, Sri Krishnadevaraya University, Anantapuramu, AP. Parallel session 2 was chaired by Dr. G. Upender Reddy, Department of Mathematics, Mahatma Gandhi University, Nalgonda, Telangana. The

Parallel sessions 3 & 4 were chaired by Capt. Dr. N. Rama Krishna, Professor of Mathematics, and NCC Officer, Mrs. A. V. N. College, Visakhapatnam and Dr Kuncham Syam Prasad, Professor, Department of Mathematics, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal respectively. A lunch break of 30 minutes was announced. The afternoon session resumed as per the schedule. There were 2 invited talks. One of the talk was delivered by the International Speaker from Russia who is on a project from DST, Prof. Margarita Safonova DST Project Scientist, Indian Institute of Astro Physics, Bangalore on "Space Astronomy: Why and How". The session was chaired by Prof. S.N. Hasan, Dept. of Mathematics, Dean & Alumni, Maulana Azad National Urdu University, Hyderabad, Telangana. The second talk was delivered by Dr. B. Suresh Kumar, Associate Professor and Research Coordinator, Amity University, Rajasthan Jaipur on "Optimization from Nature Inspiration". The session was chaired by Prof. V. V. Haragopal, BITS Pilani, Hyderabad Campus, Hyderabad, Telangana. The participants were informed to disperse for the respective parallel sessions. There were two parallel sessions. Parallel sessions 5 & 6 were chaired by Dr. B. Suresh Kumar, Associate Professor and Research Coordinator, Amity University, Rajasthan Jaipur and Dr. V. Kiran, Department of

Mathematics, Osmania University, Hyderabad, Telangana respectively. On the first day 25 papers were presented out of the 31 scheduled presentations. The participants who could not present were contacted and informed that they can present in one of the slots on day 2.

Day 2:

The second day of the conference also started with a lot of scientific fervor. The organizing secretary Dr. Meera Joshi gave a warm welcome to all the participants. The first invited talk was delivered by International speaker Dr. Prashanth Pendyala, Post-Doctoral Research Scientist, Centre for Bio Micro Systems, Korea Institute of Science & Technology, South Korea on “Basic concepts of computational studies in surface interactions”. The session was chaired by Prof. E. Keshava Reddy, President of APTSMS, (Care Taking), Department of Mathematics, JNTU Anantapur, Ananthapuram, AP. The second invited talk of the morning session was by Dr. S.S.V.N. Sarma Retd. Professor, Kakatiya University, Telangana. The session was chaired by Dr.K.Srinivasa Rao, Professor & Head, Department of Mathematics, Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya, Kanchipuram, Tamilnadu. The third invited talk was given by Prof. Bhavanari Satyanarayana, AP Scientist Awardee Fellow, AP Academy of Sciences, Acharya Nagarjuna University, A.P on “The Role of Prime Ideals in Different Algebraic Systems”. The session was chaired by Prof. D. Bharathi, General secretary of APTSMS(Care Taking),Professor, Department of Mathematics, S. V. University, Tirupati , AP The participants were informed to disperse for the respective parallel sessions. There were two parallel sessions. Parallel sessions 7 & 8 were chaired by Prof. V. Suguamma, Department of Mathematics, SV University, Tirupati, AP and by Dr. A. Chandulal, Department of Mathematics, National Sanskrit University, Tirupati, AP respectively. The lunch break of 30 minutes was announced. The last session of the conference started after lunch with an invited talk by Dr. Saptarshi Das, Global manager, Data Science R&D, Shell, Bangalore on “Customization of Loss Function in Machine Learning”. The session was chaired by **Dr. Samarth Bharadwaj** , Research staff member at IBM research lab, Bangalore, Karnataka. The second talk of this session was delivered by Dr. Naseer Ahmed, Department of Information Technology, University of Technology and Sciences, Nizwa, Sultanate of Oman on “On structure of Vague Graph”. Prof B Maheswari (Retd), Head, Department of Applied Mathematics, Sri Padmavathi University, Tirupati, Hyderabad chaired the session. Later the participants were informed to disperse for the paper presentations in parallel sessions 9 and 10. The parallel sessions were chaired by Prof. M. CHANGAL RAJU Department of Mathematics, JNTUA College of Engineering Pulivendula (Autonomous), Pulivendula,YSR-Kadapa Dt. Andhra Pradesh and **Dr.R.P.Vijayalakshmi**, Professor,Dept. of Physics, S.V.University respectively. On the second day 20 papers were presented in 4 parallel sessions in various areas of Mathematical and Physical Sciences. The Valedictory session started after the parallel sessions . Mr. Aslam shareef, Department of Physics welcomed all the dignitaries and the participants to this session. Dr. Meera Joshi submitted the gist of the proceedings of the conference. Dr. Priya Hasan, Assistant Professor, Department of Physics, Moulana Azad National Urdu University and Dr. K. Ramesh Babu, Department of Mathematics, Osmania University who were the chief guests of the conference addressed the participants and appreciated the efforts of organizers for conducting a successful conference which

achieved the objectives of the conference. Towards the end of the conference a group photo was taken as a screen shot. The event came to an end with the rendering of national anthem.

Ms. Chandrakala ensured that all the participants receive all the certificates in time. Later she coordinated in making the corrections wherever the participants requested for a change.

Dr. Meera Joshi , coordinated in preparing the e-Souvenir. The affiliation of all the authors was collected through a google form. The link was shared in the group of presenters and also to their mails. A skeleton of the e-Souvenir was approved by principal, Aurora's Degree & PG College. Based on the skeleton the designer Mr. Vishnu started working on it. Ms. Prathibha, Head, Department of Mathematics supported in preparing the e-Souvenir. A e-Souvenir book is also prepared and forwarded to emails of all participants.

Acknowledgements:

We the organizing secretaries of the conference thank the management, principal, Vice-principal, heads of the department and Faculty for their guidance, encouragement and support in making the conference a great success. We thank the non-teaching and administrative staff for the support they extended in smooth functioning and execution off the conference successfully.

LINKS:

LINKS for Day 1 inaugural, Keynote address, Invited talks & Day 2 invited talks, Valedictory.

DAY 1 :

Inaugural, Keynote address and Invited talks:

https://drive.google.com/file/d/1XFTWAplztMONK10RmRdaVb0wY3_GDfgN/view?usp=drive_web

Invited talks:

https://drive.google.com/file/d/1611EzoiSCZXkUm-6mdXhiLdj6L5s2KS2/view?usp=drive_web

DAY 2:

LINK FOR FN TALKS:

https://doc-0g-1o-docs.googleusercontent.com/docs/securesc/cnda13jpbdivg8ibkdb37arenoq8jngm/atb8t572mcfhfpqouf9i5ed7k7ca28m23/1632555150000/06051003440418554041/14944326456997923503/1Y58GZma_SuMCu8KPO8psPDSCdQD2Fh66?e=download&authuser=0

LINK FOR AN TALKS & VALEDICTORY:

https://drive.google.com/file/d/1H5yGMFKcJioL2bw6VWB4_bwhZ1qrxNro/view?usp=drive_web

Links for Parallel Sessions:

Session 1 Link:

https://drive.google.com/file/d/1EvFR5ZtwWfITqiP2qFdweG02xVV4L2Ds/view?usp=drive_web

Session 2 Link:

https://drive.google.com/file/d/1bDTlxocQ8scQxOUE68fSjbeUF8HV9Nsm/view?usp=drive_web

Session 3 Link:

https://doc-14-1o-docs.googleusercontent.com/docs/securesc/cndal3jpbdv8ibkdb37arenoq8jnm/dghtk6lek1an8mrs3vq2jt8irdkn6693/1632555150000/06051003440418554041/14944326456997923503/1H5yGMFKcJioL2bw6VWB4_bwhZ1qrxNro?e=download&authuser=0

Session 4 Link:

https://drive.google.com/file/d/1Ablf_41kNyyet4Q5xGINDLIwZaKPoHMO/view?usp=drive_web

Session 5 Link:

https://drive.google.com/file/d/1tQVPixyBGyGDVcAo5RT0HpJ7ShLJ2-dw/view?usp=drive_web

Session 6 Link:

https://drive.google.com/file/d/1c1WPL6ubvrjswe6dZgicSWGiWu6uhv5K/view?usp=drive_web

Session 7 Link:

https://doc-0o-1o-docs.googleusercontent.com/docs/securesc/cndal3jpbdv8ibkdb37arenoq8jnm/pmlpujl72us8c41ptmih1p1nmj86vo6/1632555150000/06051003440418554041/14944326456997923503/13iA-iRjPSBnVxK7_p5n_URqSmEyceXcA?e=download&authuser=0

Session 8 Link:

https://drive.google.com/file/d/1yf_ap7m-zfTzyVk7r2tvNBk8onywnHgU/view?usp=drive_web

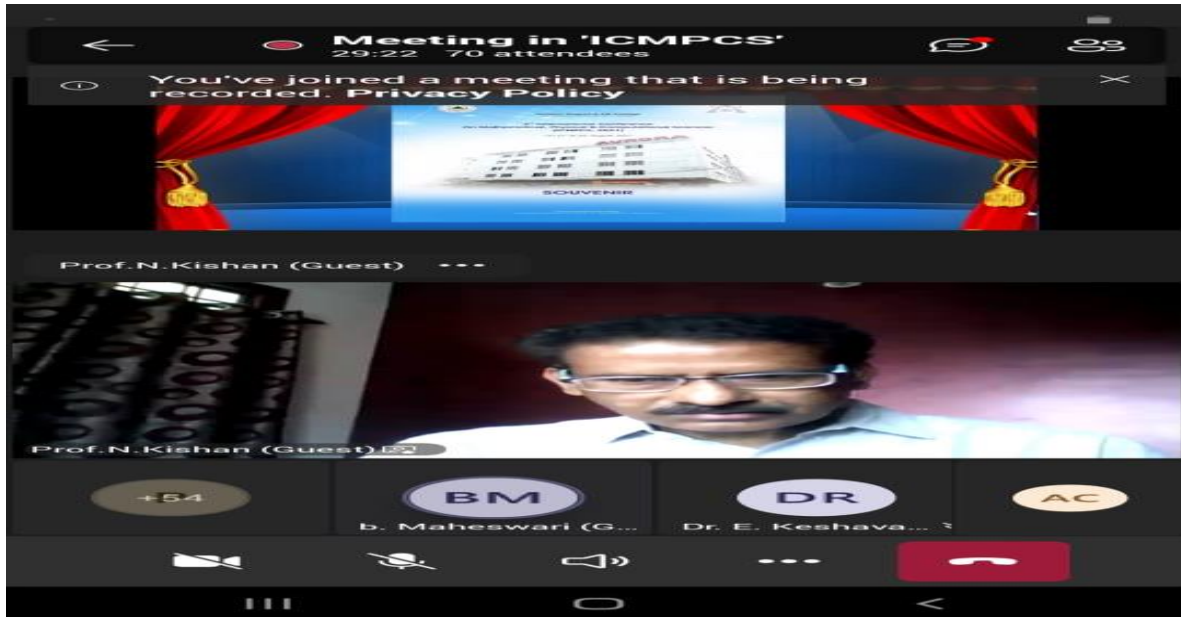
Session 9 Link:

https://drive.google.com/file/d/16ipyqKIHDwDBKAlHyUpuS3AC3HaML89a/view?usp=drive_web

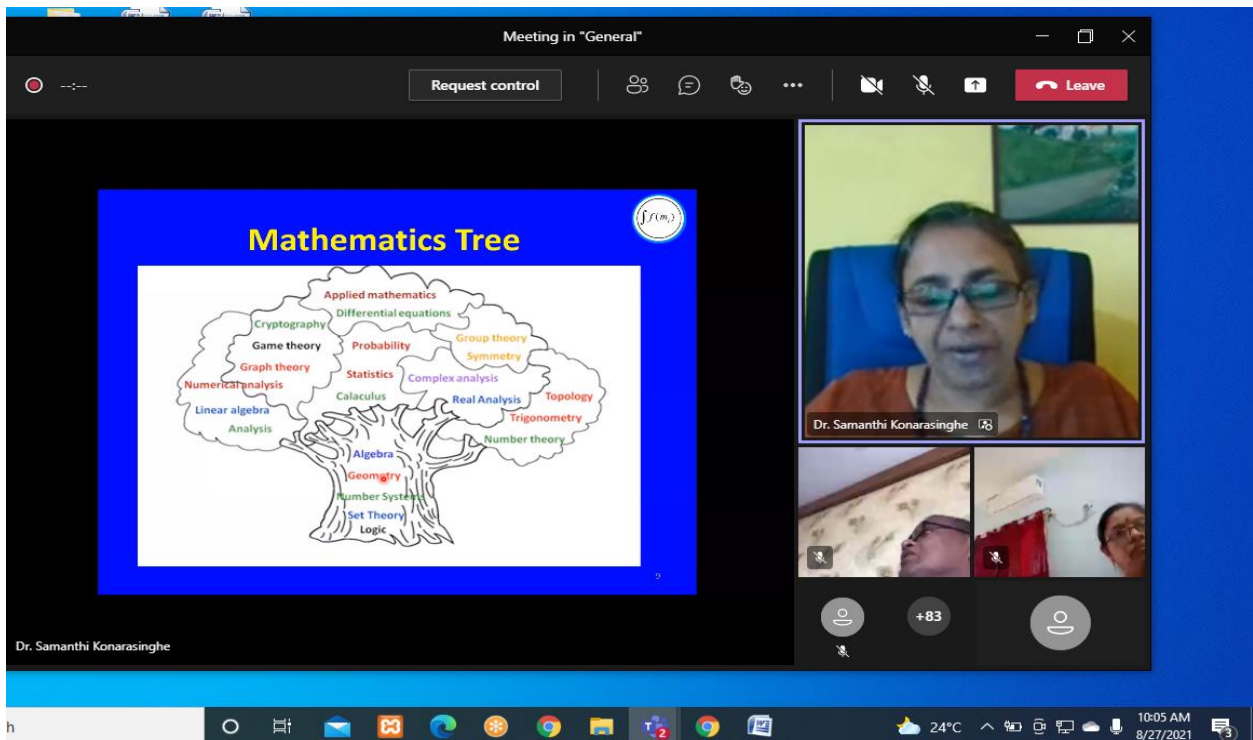
Session 10 Link:

https://drive.google.com/file/d/176uG9JePjWk_fSNuOv--TnU1MW40Rom2/view?usp=drive_web

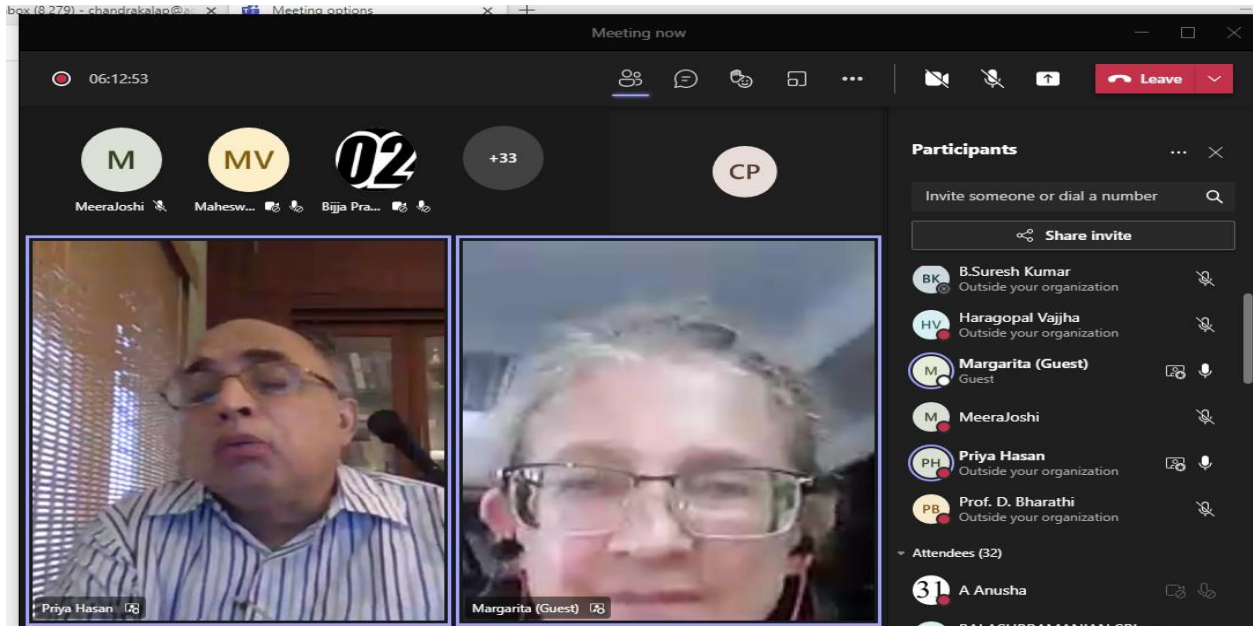
Photo Gallery:



RELEASE OF e-SOUVENIR by Prof. N. Kishan, Head – Department of Mathematics, OU.



1. Dr. SAAMANTHI KONARSSINGHE - KEY NOTE SPEAKER FROM SRILANKA

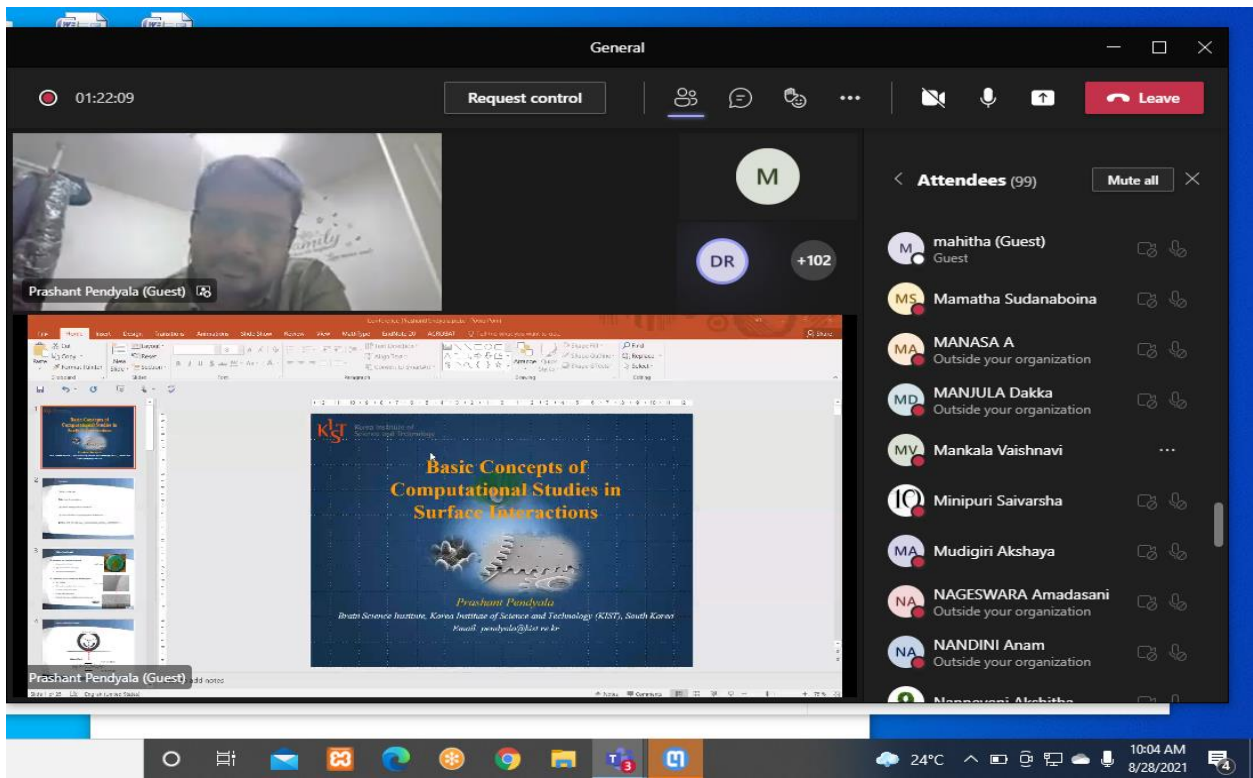


LEFT: Prof. S.N. HASAN, Department of Mathematics, Maulana Azad National Urdu University (Session chair)

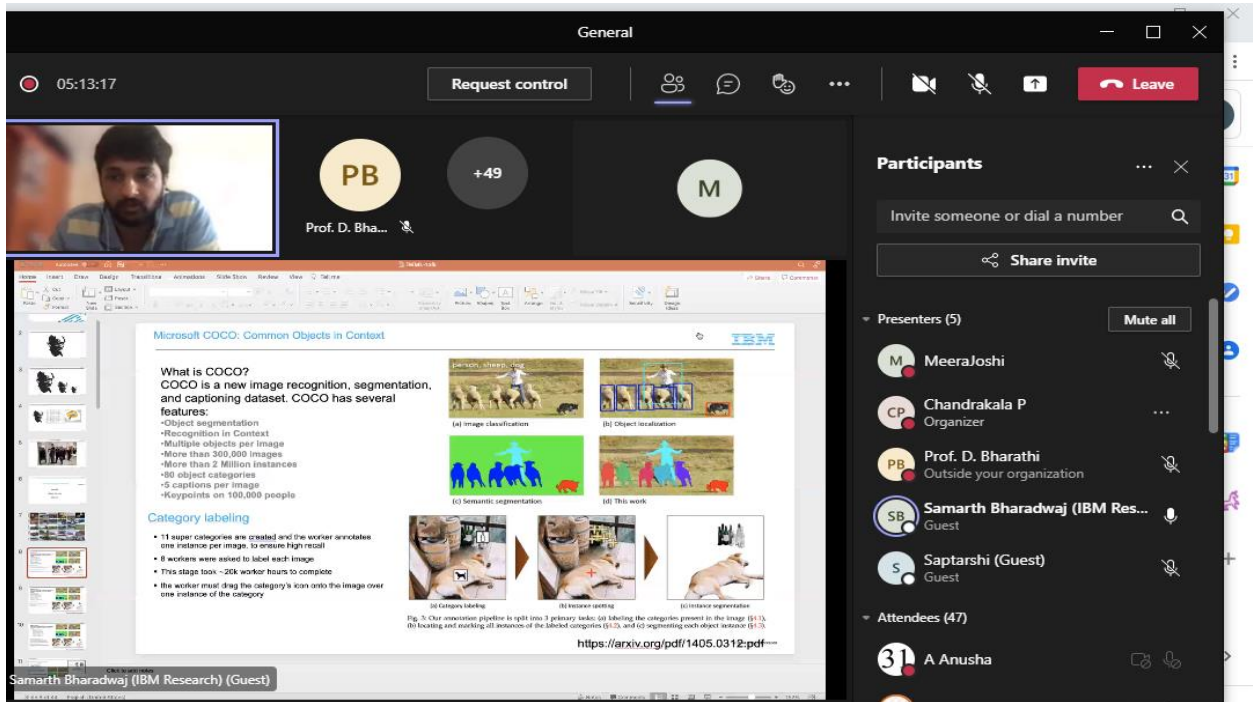
RIGHT: Dr. Margarita Safanova, Russia & Scientist - Indian Institute of Astronomy & Astrophysics



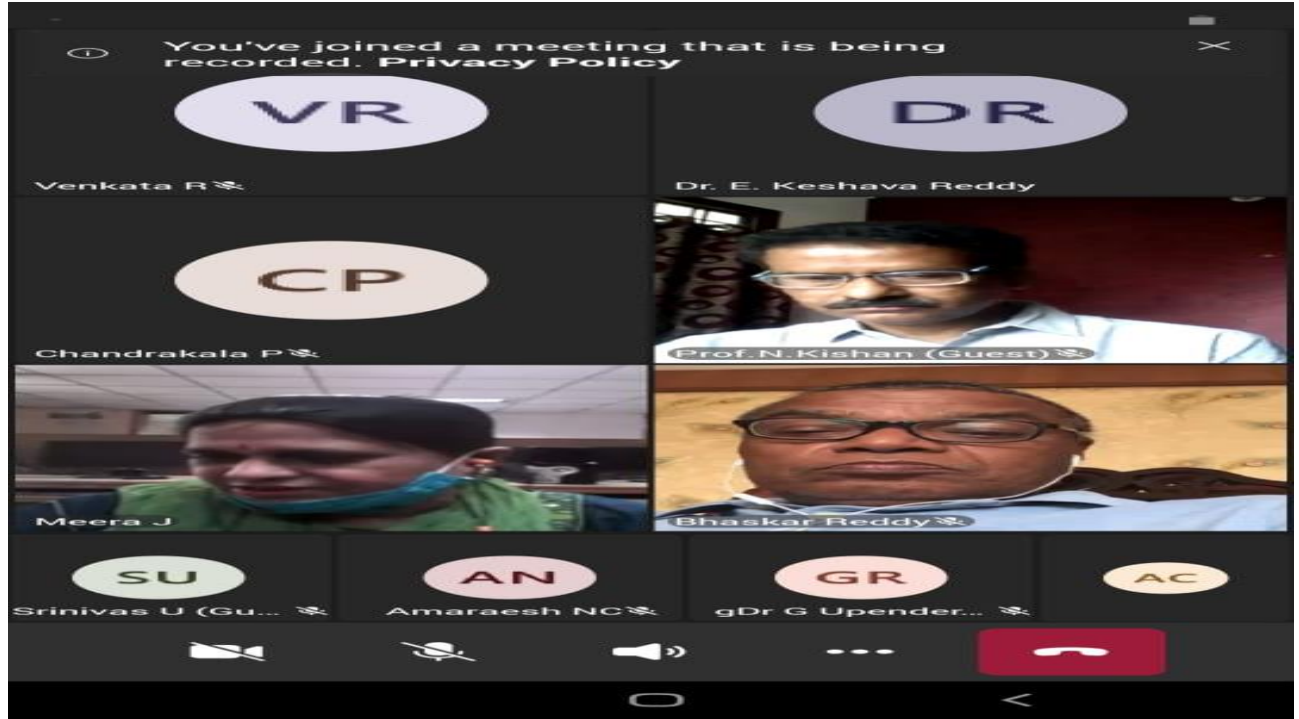
Invited talks by Prof. Sunderanand Putcha, Department of Mathematics, Rayalaseema University



Invited talk by Dr. Prashant Pendyala Scientist from – Korea.



Invited talk by Dr. Samarth Bharadwaj, Scientist – Research and Development, IBM.



INAUGURAL SESSION



VALEDICTORY SESSION



Dr. VISWAANAADHAM BULUSU-PRINCIPAL AURORA DEGREE & PG COLLEGE Addressing during Valedictory & Dr. Meera Joshi, Department of Mathematics – Coordinating the proceedings.



Ms. Chandrakala.P – Delivering VOTE of THANKS



Prof. Limbadri.R. – Chairman, Telangana State Council for Higher Education, being invited for the conference by Dr. Meera Joshi, Department of Mathematics, ADC & Mr. Poornchander, Department off Electronics.