

SUMMARY OF NMS NCMA 2017

JANUARY 11 – 13, 2017 (Poush 27 – 29, 2073)

BMC, Bharatpur, Chitwan

Mathematics always plays a fundamental role in society and it has been considered to be a language for modern technology. Nepal Mathematical Society (NMS) has organized its *THREE DAYS* Sixth National Conference on Mathematics and Its Applications (NCMA 2017) in collaboration with the Central Department of Mathematics, Tribhuvan University(TU), Kathmandu University(KU), Nepal Sanskrit University(NSU), Agriculture & Forestry University(AFU) and Department of Mathematics, Birendra Multiple Campus, TU at Bharatpur, Chitwan from **January 11 – 13, 2017** (Poush 27 – 29, 2073). The theme of the conference was “**Mathematics: Its fundamentals, teaching and applications**”. The main objective of the conference was to bring together mathematicians, researchers and students in one platform to interact with each other to share their knowledge and experience as well as to exchange views and discuss the topics of mutual interests in this challenging and widely applied area of mathematical sciences. The program was divided into *TEN sessions*: inaugural, eight scientific and cultural. The venue of the conference was Bharatpur Garden Resort Pvt Ltd.

The chief guest of this inaugural session on **Wednesday January 11, 2017** was Prof. Dr. Iswori Prasad Dhakal, the vice-chancellor of Agriculture & Forestry University. The president of NMS Prof. Dr. Tanka Nath Dhamala was the chairman of this session. The chief guest inaugurated the program by lighting the lamp. The coordinator of local organizing committee Prof. Dayaram Paudyal formally welcomed the participants and highlighted the need of first ever conference of mathematics in Chitwan. It was followed by the national anthem and launching of a “research journal of mathematics M_0 of 2016” (print ISSN 2382- 5324) by the chief guest and NMS president that has been published by Department of Mathematics, Post Graduate Campus, Biratnagar, Morang. This journal will now on wards be published b as a publication of the Biratnagar Chapter of NMS.



(Group photo of NMS NCMA Chitwan 2017)

During this program, there were greetings and remarks by Mr. Govinda Sapkota, Campus chief of Birendra Multiple Campus, Mr. Khem Narayan Sapkota, the campus chief of Saptagandaki Multiple Campus, Prof. Dr. Sita Ram Bahadur Thapa, the coordinator of BMC Research Management Cell, Prof. Dr. Kedar Nath Upreti, Head of TU Central Department of Mathematics, Prof. Dr. Bhadra Man Tuladhar, IPP of NMS and formal registrar of KU, Prof. Dr. Ram Man Shrestha, Academician of Nepal Academy of Science and Technology (NAST) & former president of NMS and Prof. Dr. Iswori Prasad Dhakal, VC of AFU and finally Prof. Dr. Tanka Nath Dhamala. The vote of thanks was given by the Vice-president of NMS Prof. Dr. Narayan Prasad Pahari. The MC of this program was the secretary of NMS Prof. Dr. Kanhaiya Jha. The rapporters of this session were NMS EC members Mrs. Gita Shrestha, Prof. Dr. Chinta Mani Pokharel and Prof. Dr. Raj Narayan Yadav.

According to the coordinator of scientific committee Prof. Dr. N. Pd. Pahari, total **141** participants including professors, mathematics teachers, research scholars, M.Phil. Students and master students were registered in this conference from different part of the country and from India. Total 71 abstracts were received for oral presentation, but only 50 were selected for presentation. Out of which 48 participants presented their work as oral and two as poster presentation. These 50 presentations were classified into eight scientific sessions with participants 27 from TU, 21 from KU, one from NSU and one from India.

On **January 12, 2017**, there was an academic visit to Birendra Multiple Campus and a half day excursion tour to Sauraha. At Sauraha, participants visited Museum, Elephant Breeding Center, Elephant safari, Rapti river for observing sunset, Tharu Cultural Center for various Tharu dances. Some of the participants also visited Chitwan festival, Maulakali temple and holy place devghat.

On January 13, 2017, the closing ceremony was organized at Chitwan Lodge Resort with the remarks from Mrs Gita Shrestha, Dr. Dil Bahadur Gurung and Mr. Raja Ram Acharya about their experiences during the conference. The NMS president Prof. Dr. Dhamala and chairman of this session gave the “*Letter of Appreciation*” to Mr. Gobinda Sapkota, the campus chief of BMC. NMS joint-secretary Mr. Parameshwari Kattel was the MC of this session and NMS EC member Mr. Jeevan Kafle gave the vote of thanks to all. During this program, Prof. Dr. Dayaram Paudyal highlighted the overall process of organizing this conference and its relevance for the promotion of research activities at BMC, TU, Chitwan. The program was concluded by NMS President Prof. Dr. Tanka Nath Dhamala with his remarks and possibility of future international conference of mathematics at Chitwan.

Many institutions and business houses sponsored and co-sponsored to organize this national conference. The sponsored institutions were University Grants Commission (UGC), Nepal Academy of Science and Technology (NAST), Sagarmatha Engineering College, Himalaya College of Engineering, Sukunda Pustaka Bhawan, United Nepal Publication. Also, the co-sponsored institutions were Gurukula College, Orchid Science College, Ayam Publication, Quest Model College, Balmikee HSS, New Capital College, Oxford College of Engineering and Management, Nimbus Abroad Study, Boston College, Sky Rider HSS, Prerana College, Aroma College, Nepal Polytechnic Institute, Sungava College, Namuna HSS.

The program was nicely covered and circulated by local news papers, FM Radios and televisions.

NMS established in 1979 AD with 700 life members has been organizing the **bi-annual** conference since 2010. In 2010, the conference was held in Biratnagar (Morang), the eastern region, in 2012 in Mahendranagar (Kanchanpur), the far-western region, in 2014 in Birendranagar (Surkhet), the mid-western region of the country.

OPENING SESSION (9.30 – 10.30)

Scientific Session - I

Chair Person: Prof. Dr. Kedar Nath Upreti

Ram Man Shrestha: *Mathematical Sciences with Special Focus on Promotion of Biomathematics Education in Nepal.*

Dil Bahadur Gurung: *Some problems in Mathematical Ecology*

Ganga Ram Phaijoo and Dil Bahadur Gurung: *Mathematical Study of Impact of Temperature and Movement of Humans on Persistence of Dengue Disease*

Jeevan Kafle, Parameshwari Kattel, Jan-Thomas Fischer, Martin Mergili, Bhadra M. Tuladhar, Shiva P. Pudasaini:

Impact and Obstacle Interaction of Submarine Landslides in Water Reservoirs

Puskar Raj Pokhrel, Khim B. Khattri, Bhadra M. Tuladhar, Shiva P. Pudasaini: *A Novel Derivation of Generalized Quasi Two-Phase Mass Flow Model*

Chet Nath Tiwari, Dil B. Gurung and Dhruba Raj Adhikari: *Pennes Bioheat Equation*

Jagdish Gnawali, Dil Bahadur Gurung and Dhruba Raj Adhikari: *Lyapunov Function for the Dynamical Analysis of Lotka-Volterra*

Shiv Prasad Neupane: *Stability Analysis of May's Predator-prey Model for two Prey and two Predator*

Scientific Session - II

Chair Person: **Prof. Daya Ram Poudel**

Kanhaiya Jha: *On Some Aspects of Teaching Mathematics*

Jivandhar Jnawali and Chet Raj Bhatta: *Some Iterative Methods for Solving Nonlinear Equations*

Ramesh Chandra Timsina: *Flow of Liquid in a Porous Media (soil)*

Khagendra Adhikari: *Study on Prime Generating Functions*

Bhadra Raj Tripathi : *Analysis of Content, Gender and Ethnicity in Mathematics Learning - A Case of class Eight*

Shyam Sundar Sah and R.P. Ghimire : *Optimization of General Series-parallel and Sequential Series-parallel Systems*

Gajendra Sharma and **Deep Raj Sharma:** *A Methodology for e-Readiness Computation using Divide, Predict and Conquer Approach*

Scientific Session - III

Chair Person: **Prof. Dr. Ram Man Shrestha**

Bhadra Man Tuladhar: *Tensors and Their Eigenvectors*

Narayan Prasad Pahari : *On Some Function Spaces and Sequence Spaces*

Kumar Subedi : *Some Applications of Banach Contraction Principle*

Shesraj Kumar Sharma Bhattarai : *Analytical Aspects of Applying Permutation Method in Evaluating Determinant*

Arjan Kumar Sunar: *Fibonacci Sequence and its Application in Mathematics and Real Worlds*

Bijaya Adhikary: *Bolzano Weierstrass Theorem and its Application*

Chinnta Mani Pokhrel: *Conformal Metric and Its Curvature*

Program: Day - SECOND

Thursday January 12, 2017 (Poush 28, 2073)

Scientific Session - IV

Chair Person: **Prof. Dr. Raj Narayan Yadav**

Tanka Nath Dhamala and Urmila Pyakurel : *Impacts of OR Solution Strategies in Real-Life*

Iswar Mani Adhikari : *Dominance Vehicle Routing in Transit Dependent Evacuation Scenario*

Hari Nandan Nath : *Identification of Optimal Pick-up Locations with their Demands in Evacuation Planning of Transit-dependent Population*

Phanindra Prasad Bhandari and Shree Ram Khadka : *On Non-conserving Flow Aspect of the Evacuation Planning Problem*

Ram Chandra Dhungana : *Flow Improvement with Fixed Switching Cost in Network Flow Models*

Ami Raj Adhikari and Ram Prasad Ghimire : *Cost Analysis of $E_2/E_2/1/m$ Queueing System with Sinusoidal Arrival Rate Function Subject to Server Breakdown*

Poster Presentation: (11.00 – 01.00 pm)

Manoj Kumar Raut and Surya Kumar Yadav : *Some problems of Von - Neumann and their solutions*

Hari Prasad Gnawali : *A note on maximal Monotone Operator*

Scientific Session - V

Chair Person: **Prof. Dr. Chinta Mani Pokhrel**

Shree Ram Khadka : *A Sequencing Approach for Asymmetric Bottleneck Product Rate Variation Problem*

Raju Ram Thapa and **Surya Kumar Yadav** : *Sitnikov Problem in Kite configuration*

Basu Dev Ghimire and Ram Prasad Ghimire : *Reliability and Availability of Machines with Two Types of Failures Operated Under Periodic Surveillance Test*

Arun Kumar Tripathy and **Abhay Kumar Sethiy(India)**: *Necessary and Sufficient Conditions for Oscillation of a Class of Second Order Neutral Differential Equations*

Raj Kumar Pradhan and Samir Shrestha : *Microscopic Modeling and Simulation of Pedestrians Motions*

Scientific Session -VI

Chair Person: **Prof. Dr. KanhaiyaJha**

Hari Narayan Upadhyaya: *Straight Line Patterns to Strengthen Mathematical Understandings*

Sushil Chandra Karna : *Effect of Atmospheric Resistance, Magnetic Force and Oblateness of the Earth*

Khim B. Khattri, Puskar R. Pokhrel, Bhadra Man Tuladhar and Shiva P. Pudasaini :
A Fast and Efficient Simulation of a Generalized Quasi Two-Phase Mass Flows

Mina Gumanju and Dil Bahadur Gurung : *Galerkin Approximation Approach for Determining Urea Concentration in Artificial Kidney*

Bhuwan Prasad Ojha: *Different Concepts of Derivatives*

Kanchha Bhai Manadhar: *Fuzzy Set and Fuzzy Metric Space*

Academic Visit to Birendra Multiple Campus, TU

Excursion to Sauraha: visiting Museum, Elephant Breeding Center, and observing sunset

Conference Dinner at **Balesi Resturent**, Sauraha Sponsored by **Sukunda Pustak Bhawan**, KTM

Program: Day - THREE

Friday January13, 2017 (Poush 29, 2073)

Scientific Session -VII

Chair Person: **Dr. Dil Bahadur Gurung**

Raj Narayan Yadav and **Surendra Raj Pathak :** *On Signed Graphs*

Basanta Raj Lamichhane : *Envisioning an Alternative Nature of Mathematics*

Parameshwari Kattel, Jeevan Kafle, Jan-Thomas Fischer, Martin Mergili, Bhadra Man Tuladhar and Shiva P. Pudasaini :

Modeling the Dynamic Interaction of Two-phase Debris Flow with Pyramidal Defense Structures

Buddhi P. Sapkota, Kedar Nath Upreti, Harihar Khanal, and Prakash Bhawe : *Modeling of Indoor Air Contaminants Distribution in a Naturally Ventilated Kitchen Under Different Ventilation Conditions*

Ramesh Khanal : *Use of Cryptography in e-Application of Chitwan*

Scientific Session :VIII

Chair Person: **Prof. Dr. Narayan Prasad Pahari**

Dhana Kumari Thapa : *Some Aspects in Complex Dynamics*

Bishnu Hari Subedi and Ajaya Singh: *On the Subset of Escaping Set*

Anjana Pokhrel : *Algebraic Properties of Toeplitz Operators on Hardy and Bergman Space*

Gauri Bhuju and Dil Bahadur Gurung : *Effect of temperature Variation on Malaria Disease Dynamics*

CLOSING SESSION (12.00 – 01.00)