



**MANAV RACHNA
UNIVERSITY**

Distance Education University vide UPECA No. 26 of 2014



*Report on International Workshop
on*

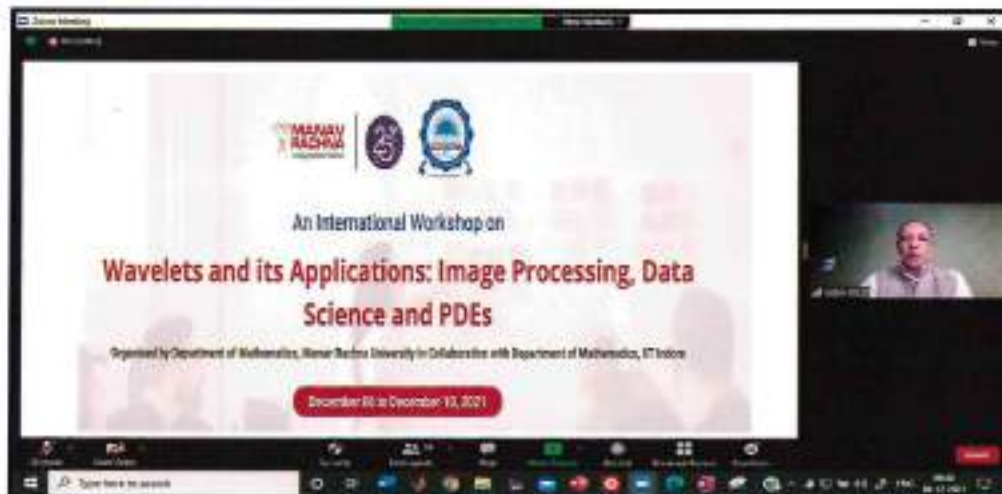
Wavelets and its Applications: Image Processing, Data Science and PDEs

in collaboration with

Department of Mathematics, IIT Indore

December 06th - 10th, 2021

On the occasion of MREI 25 Year - Silver Jubilee Celebration, **Department of Mathematics, Manav Rachna University in collaboration with Department of Mathematics, IIT Indore** organised a five day Workshop on **Wavelets and its Applications: Image Processing, Data Science and PDEs** from **December 06 - 10, 2021** for academicians, researchers and students. Around 600 participants registered and 400 were selected from various universities/institutions from India and abroad (Nepal, Malaysia, UAE, USA etc).



Workshop being initiated on Day 1 by Dr. IK Bhatt, VC, MRU

Deepa



Workshop was inaugurated in the benign presence of Prof. I.K. Bhat, Hon'ble Vice Chancellor, MRU, Prof. Dr. Sangeeta Banga, Dean Academics; Prof. Dr. Pradeep Varshney, Dean Research and Dean Applied sciences; Prof. Dr. Niraj Kr. Shukla, Head - Department of Mathematics, IIT Indore, Prof. Bin Han, University of Alberta, Canada, Prof. Ratikanta Behra, University of Florida, USA, Dr. Deepa Arora, Head, Department of Mathematics and Dr. Aparna Vyas, Associate Prof. Department of Mathematics. Dr. Deepa Arora delivered the welcome address and Dr. Aparna Vyas briefed about the objective & outcome of the workshop. Prof. LK. Bhat addressed the gathering and emphasised on the philosophy of Mava Rachna University, its vision and endeavors undertaken to excel on the path of progress. He emphasised the role & importance of Centres of Excellence at MRU and accomplishments gained.

Sir also presented the importance of Wavelets and its multidisciplinary applications in the areas like Engineering Physics, Biomedical, Signal & Image processing, Healthcare Industry, fiscal sustainability etc and appreciated the organisers for convening this prestigious workshop which shall serve as the learning platform in multi disciplinary areas .

Dr. Aparna Vyas, thanked the esteemed guests for joining the Inaugural session.

On the first day, the workshop consisted of two invited talks. First talk was delivered by Prof. Ram Bilas Pachori, Professor, Department of Mathematics, IIT Indore entitled "Wavelet Transform Fundamentals with Signal Processing Applications". The second talk was delivered by Prof. Hans Georg Feichtinger, University of Vienna, Austria entitled "An axiomatic approach to mild distributions". Prof. Pachori briefly explained the transition from Fourier to Wavelet transforms, while Prof. Hans Georg Feichtinger discussed the advantages of the axiomatic approach to mild distributions and explained a Banach space for test functions.



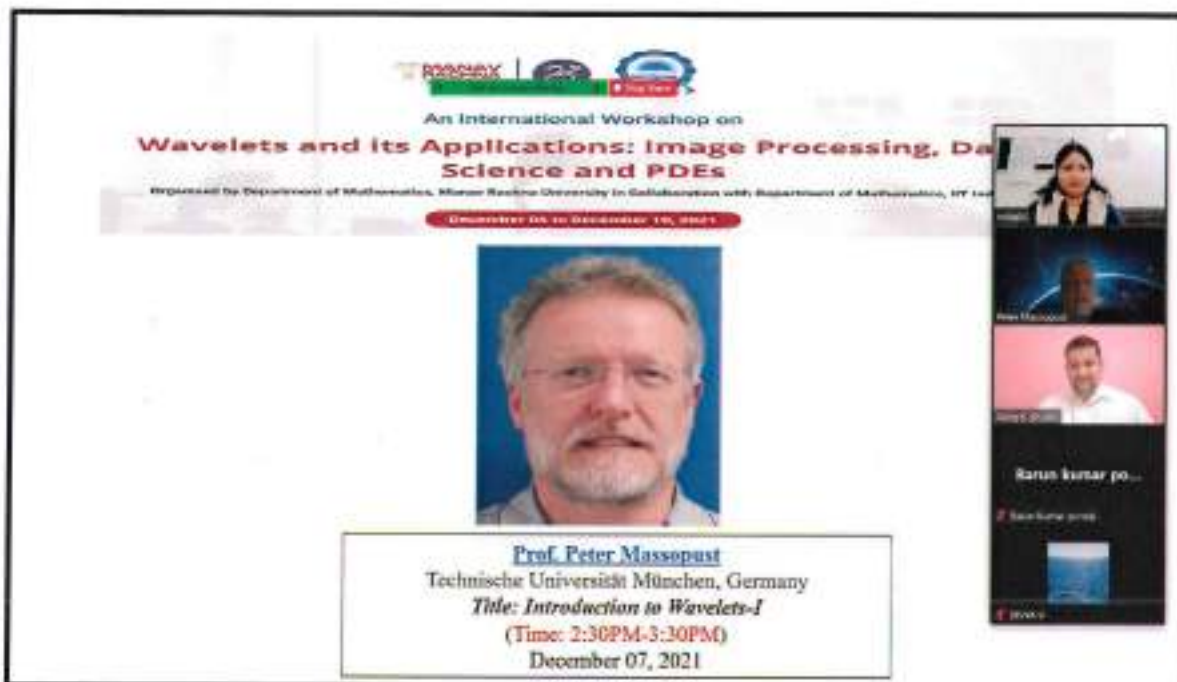


Prof. Khalil Ahmad, Al- falah University continuing the session on 07th December 2021

On December 07, 2021 (Day 2) the workshop comprised of three sessions. The first session was on "*Wavelet methods for numerical PDEs and data science*" by Prof. Bin Han, Professor, University of Alberta, Canada, second session by Prof. Khalil Ahmad, Al-Falah University, Faridabad & formerly Professor & Head, Department of Mathematics, Jamia Millia Islamia on "*Applications of Wavelets: Signal & Image Processing*" and session third by Prof. Peter Massopust, Technische Universität München, Germany, on "*Introduction to Wavelets-I*". Day 2 sessions covered the history & emergence of Wavelet theory and its applications in the solution of PDEs.

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Prof. Peter Massopust initiating the session on “Introduction to Wavelets-I”

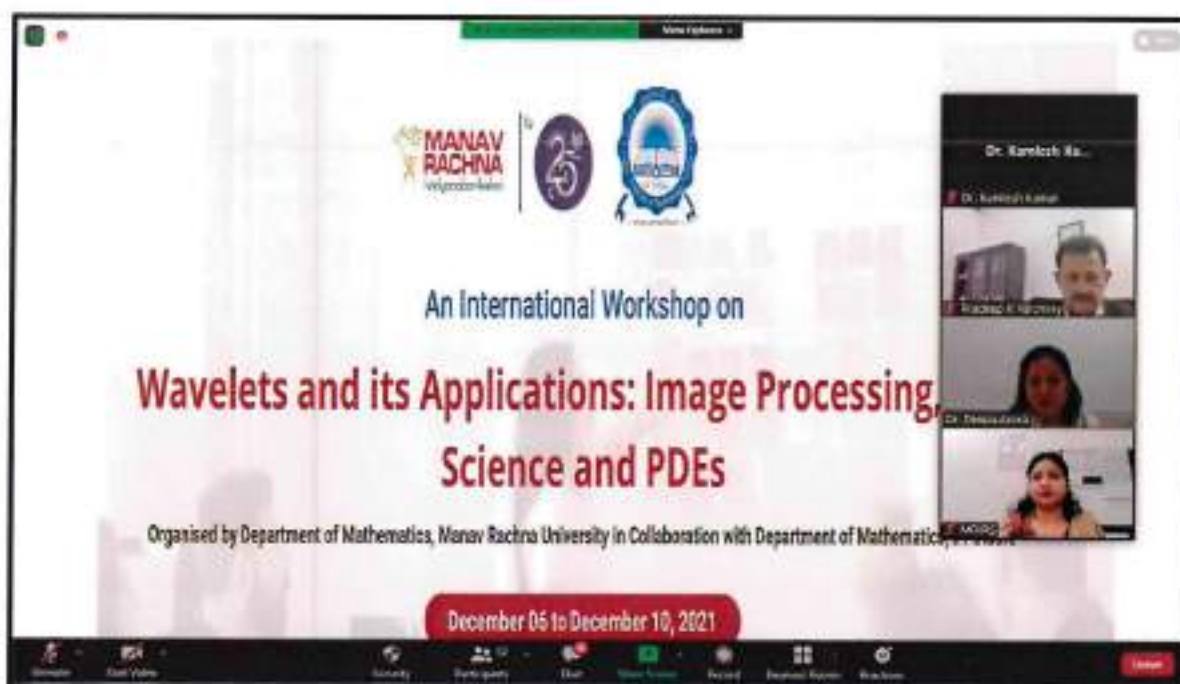
On December 08, 2021 (Day 3) the workshop consisted of 3 sessions. First session was by Dr. Ram Jiwari, Associate Professor, Department of Mathematics, IIT Roorkee on “*Solution Study of Differential Equations using Wavelets*”, second session by Dr. Niraj Kumar Shukla, HEAD & Associate Professor, Department of Mathematics, IIT Indore on “*Multiscale Transforms & their Applications*” and third session by Prof. Peter Massopust, Technische Universität München, Germany, for the talk entitled “*Introduction to Wavelets-II*”. Day 3 sessions continued the mathematical construction of the Wavelets, multiscale transforms and its applications in the solution of partial differential equations.

On December 09, 2021 (Day 4) Dr. Ratikanta Behera, Researcher, Department of Mathematics, University of Central Florida, USA gave a talk on “*An Adaptive wavelet method for the solution of PDEs on the sphere*” followed by Dr. Kuldip Singh, Assistant Professor, IIT Naya Raipur on “*Wavelet based numerical method for PDEs arising in Finance*” and Dr. Swaraj Paul, Post doctoral Researcher, TIFR CAM, Bangalore, on “*Microlocal Analysis of Singularities using Shearlets*”. Day 4 sessions highlighted the wavelet method for the solution of PDEs & numerical methods for PDEs in finance.

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On December 10, 2021 (Day 5) **Dr. Rajesh Kumar Pandey**, Associate Professor, Department of Mathematics, IIT BHU gave a talk on “*Fractional Filters for Retinal Blood Vessel Segmentation*” followed by Prof. Aprajita Ojha, Professor, Department of Computer Science and Engineering, IIIT DM, Jabalpur on “*Generative Adversarial Networks with Wavelets for Medical Imaging*”. Both the sessions focussed on multidisciplinary applications of wavelets in the field of medical sciences & Artificial Intelligence.



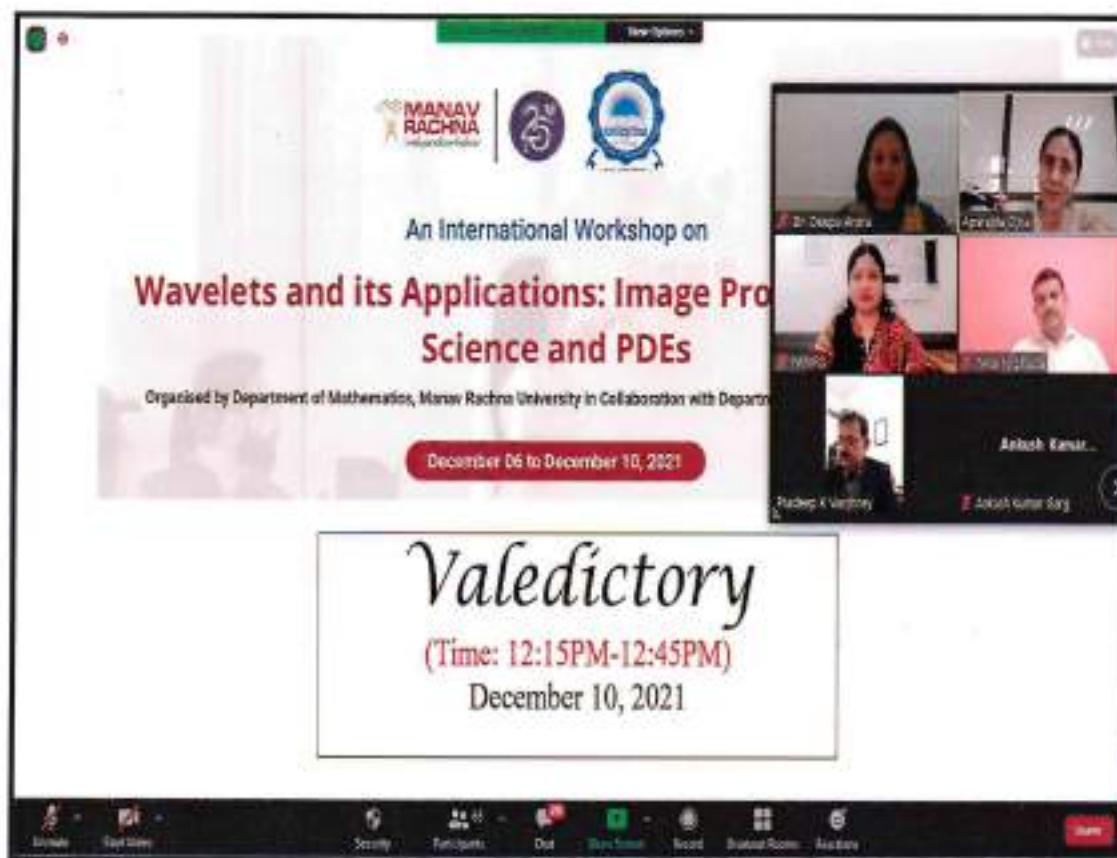
Day 2 of the workshop (07th December 2021)

The participants had a great learning experience as per their feedback. The valedictory session was chaired by esteemed Prof. Aprajita Ojha, Prof. Khalil Ahmed, Prof. Pradeep Kumar Varshney & Prof. Niraj Kr. Shukla. They addressed the gathering and motivated them for future research in upcoming areas. Dr. Deepa Arora, Head - Department of Mathematics and Organiser



of the Workshop concluded the two day workshop and Dr. Aparna Vyas, Associate Professor, Department of Mathematics & organiser of the workshop proposed the vote of thanks.

These five days were very fruitful. Participants got an opportunity to learn, explore and grow in the area of wavelets. The journey of wavelets as covered in the workshop showcased the need and emergence of wavelet theory, detailed basics and its mathematical construction and finally its wide applications in the emerging areas like data science & artificial intelligence, signal processing, image processing, solution of pdes, neural networks, financial sector etc. Each of the sessions showed a great participation number of around 150.



Valedictory ceremony on 10th December 2021

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SCHOOL OF EDUCATION &
HUMANITIES
MANAV RACHNA UNIVERSITY



Dr Praveen Kumar Anshuman
Assistant Professor Kirorimal College

Workshop on
Conjuncture, Creativity & Celebration: A
Path to Ecstasy

DATE: 21. 04. 2022

TIME: 1:30 PM Onwards

VENUE: I-BLOCK AUDITORIUM



Manav Rachna University

School of Education and Humanities

Report on Conjecture, Creativity and Celebration: A Path to Ecstasy

Date: April 21, 2022

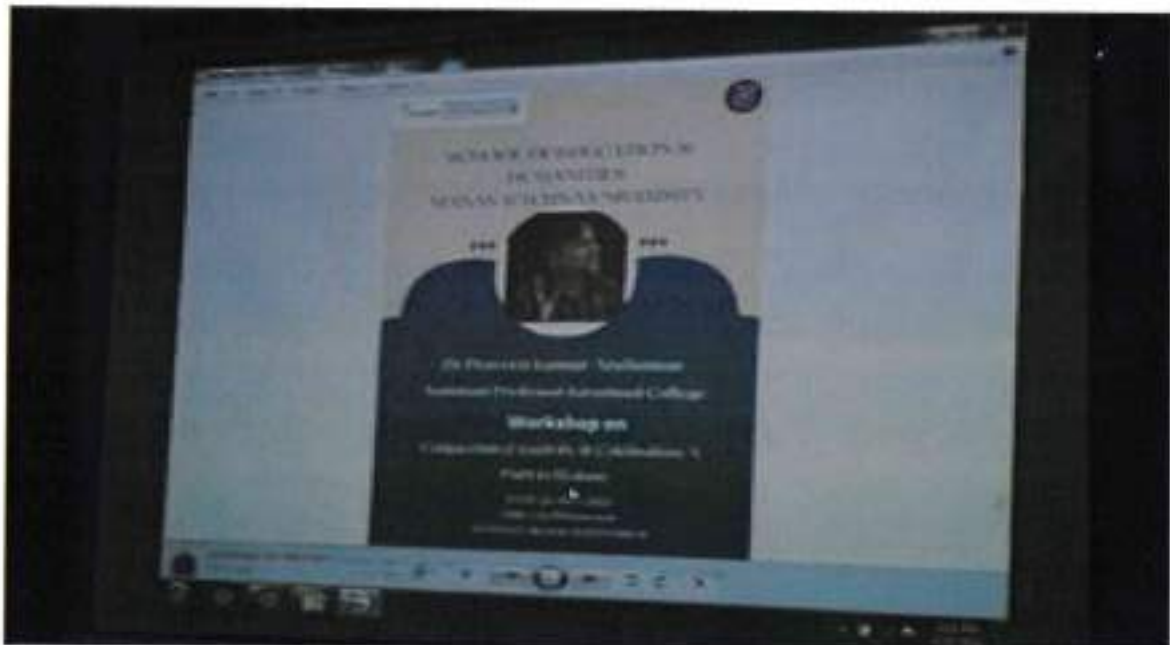
Venue: I-Block Auditorium

Resource Persons: Dr Praveen Kumar Anshuman, Assistant Professor, Kirori Mal College, Delhi University

Participants: Faculty Members

Objective: The aim of the workshop was to address the emerging trends and implications of creativity writing.

The School of Education and Humanities, Manav Rachna University organized a 'Workshop' on "Conjecture, Creativity & Celebration: A Path to Ecstasy." Dr Praveen Kumar Anshuman – Assistant Professor, Kirori Mal College, Delhi University was the resource person for the same. He has 12+ years of teaching experience in dealing with various courses of English Literature and English Language. Dr Praveen has written eight books and six are in the pipeline to be published.



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Session by Expert in Progress

Dr Anshuman has rich experience of creative writing and has written more than 15000 Ghazals. The aim of the workshop was to address the emerging trends and implications of creative writing. Dr Anshuman sensitized the participants about the importance of Creative Writing in day-to-day life for effective communication which is important for one's professional life.

Later, he engaged the students with various tasks and distributed the assignments for creative writing. The students wrote poems and stories on the themes given by him.



Expert Presenting in Workshop

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Session in Progress

The workshop began with felicitation to the resource person by Dr. Rashee Singh, Head Department Education and Humanities, MRU. The programme was coordinated by Dr. Akhilesh Kumar Driwedi – Associate Professor. It was an informative and interactive session.

Akhil

