

Conference Program

Saturday, May 7th, 2022

Time*	Event	Location**
8:00 am – 4:30 pm	Registration	Main Entrance
8:20 am – 8:40 am	Opening Ceremony	Turner A. Wingo Auditorium (Room 1030)
8:40 am – 9:40 am	Plenary Talk by Dr. Shahram Rahimi	Turner A. Wingo Auditorium (Room 1030)
9:40 am – 10:00 am	Coffee Break	Main Entrance
10:00 am – 12:05 pm	Minisymposium Sessions A***	Various Locations
12:05 pm – 1:20 pm	Lunch Break	Boxed Lunches
1:20 pm – 2:20 pm	Plenary Talk by Dr. Julie Mitchell	Turner A. Wingo Auditorium (Room 1030)
2:20 pm – 2:40 pm	Coffee Break	Main Entrance
2:40 pm – 3:40 pm	Plenary Talk by Dr. Radu Vasiu	Turner A. Wingo Auditorium (Room 1030)
3:40 pm – 4:00 pm	Coffee Break	Main Entrance
4:00 pm – 5:00 pm	Contributed Talks Sessions A***	Various Locations
5:00 pm – 5:30 pm	Travel to Conference Banquet	
5:30 pm – 8:00 pm	Reception and Conference Banquet	MAFES Barn

Sunday, May 8th, 2022

Time*	Event	Location**
8:00 am – 2:30 pm	Registration	Main Entrance
8:30 am – 9:30 am	Plenary Talk by Dr. Ludovic Dan Lemle	Turner A. Wingo Auditorium (Room 1030)
9:30 am – 10:00 am	Coffee Break	Main Entrance
10:00 am – 12:05 pm	Minisymposium Sessions B***	Various Locations
12:05 pm – 1:20 pm	Lunch Break	Boxed Lunches
1:20 pm – 2:20 pm	Plenary Talk by Dr. Liliana Borcea	Turner A. Wingo Auditorium (Room 1030)
2:20 pm – 2:40 pm	Coffee Break	Main Entrance
2:40 pm – 4:20 pm	Contributed Talks Sessions B***	Various Locations

* All times are **US Central Time** - local to Starkville, MS, USA.

** All events to be held in the **Old Main Academic Building** on the Mississippi State University campus in Starkville, MS, USA.

*** Please see the following pages for a detailed schedule of the Minisymposium and Contributed Talks Sessions, of which each is **linked** to the corresponding session on the conference website.

Plenary Talk Schedule: Room 1030

	Date and Time
<p>Dr. Shahram Rahimi, Mississippi State University, Starkville, MS, USA <i>Foresight: A Game-Theory Based System with Reinforcement-Learning for Predictive Analytics</i></p>	<p>Saturday, May 7th 8:20 am - 9:40 am</p>
<p>Dr. Julie Mitchell, Oak Ridge National Laboratory, Oak Ridge, TN, USA <i>Machine Learning Models for Biophysics</i></p>	<p>Saturday, May 7th 1:20 pm - 2:20 pm</p>
<p>Dr. Radu Vasiu, Politehnica University of Timisoara, Timisoara, Romania <i>Actual Challenges for International Higher Education, Research and Innovation as part of the Digital Transition Policies</i></p>	<p>Saturday, May 7th 2:40 pm - 3:40 pm</p>
<p>Dr. Ludovic Dan Lemle, Politehnica University of Timisoara, Timisoara, Romania <i>On the Uniqueness of the Fokker-Planck-Kolmogorov Equation Associated with Schrödinger's operators</i></p>	<p>Sunday, May 8th 8:30 am - 9:30 am</p>
<p>Dr. Liliana Borcea, University of Michigan, Ann Arbor, MI, USA <i>Waveform Inversion via Reduced Order Modeling</i></p>	<p>Sunday, May 8th 1:20 pm – 2:20 pm</p>

Saturday, May 7th: Minisymposium Sessions A

<u>MA1: Recent Developments in Finite Difference and Finite Element Methods I</u>	Room 3030 Time
Chair: Amanda Diegel	
Tom Lewis , University of North Carolina at Greensboro, USA <i>Narrow-stencil Numerical Approximations of Fully Nonlinear Second Order PDEs</i>	10:00 am – 10:25 am
Natasha Sharma , University of Texas at El Paso, USA <i>Unconditional Energy Stability and Solvability for a C^0 Interior Penalty Method for a Sixth-Order Equation Modeling Microemulsions</i>	10:25 am – 10:50 am
Aaron Rapp , University of the Virgin Islands, USA <i>Consistency and Penalty Parameter Results for the Dual-Wind Discontinuous Galerkin Methods</i>	10:50 am – 11:15 am
Jose Garay , Louisiana State University, USA <i>Multiscale Finite Element Methods for an Elliptic Optimal Control Problem with Rough Coefficients</i>	11:15 am – 11:40 am
Zhiyu Tan , Louisiana State University, USA <i>A Convexity Enforcing C^0 Interior Penalty Method for the Monge-Ampère Equation on Strictly Convex Smooth Planar Domains</i>	11:40 am – 12:05 pm

<u>MA2: Recent Advances in Time-Integration of PDEs I</u>	Room 3050 Time
Chair: Vu Thai Luan	
Alexander Ostermann , University of Innsbruck, Austria <i>Boundary Corrected Strang Splitting</i>	10:00 am – 10:25 am
Marco Caliari , University of Verona, Italy <i>A μ-mode Approach for Exponential Integrators: Action of φ-functions of Kronecker sums</i>	10:25 am – 10:50 am
Amnon Meir , Southern Methodist University, USA <i>On the Equations of Electroporoelasticity</i>	10:50 am – 11:15 am
David Shirokoff , New Jersey Institute of Technology, USA <i>Weak Stage Order Barriers for Runge-Kutta Schemes</i>	11:15 am – 11:40 am
Steven Roberts , Lawrence Livermore National Laboratory, USA <i>A Parallel Ensemble Approach to Constructing Stable, High-Order Time-Steppers</i>	11:40 am – 12:05 pm

Saturday, May 7th: Minisymposium Sessions A

<u>MA3: Recent Advances in Numerical PDE: Fast Algorithms and Applications</u> Chair: Shan Zhao and Chuan Li	Room 3070 Time
Shan Zhao , University of Alabama, USA <i>High Order Central Difference FFT Poisson Solvers</i>	10:00 am – 10:25 am
Chuan Li , West Chester University of Pennsylvania, USA <i>A FFT Accelerated High-order Method for Solving Parabolic equations in Irregular Domains</i>	10:25 am – 10:50 am
Sanghyun Lee , Florida State University, USA <i>Physics Preserving Enriched Galerkin Methods</i>	10:50 am – 11:15 am
Xiaoming He , Missouri University of Science and Technology, USA <i>PIFE-PIC: Parallel Immersed-Finite-Element Particle-in-Cell for 3-D Kinetic Simulations of Plasma-Material Interactions</i>	11:15 am – 11:40 am
Wenyuan Liao , University of Calgary, Alberta, Canada <i>A Fast Operator Splitting Method for Solving the Nonlinear Reaction-diffusion Equation with Applications in Mathematical Biology</i>	11:40 am – 12:05 pm

<u>MA4: Instability, Transition and Turbulence in Fluids: from Fundamentals to Applications</u> Chair: Adrian Sescu	Room 3090 Time
Daniel Foti , University of Memphis, USA <i>Quantification of the Scale and Energy Transfer of Coherent Structures in Turbulent Wakes</i>	10:00 am – 10:25 am
Xiaowen Wang , National Institute of Aerospace, VA, USA <i>Transition Control of Hypersonic Boundary Layers by Using Ultrasonically Absorptive Porous Coatings</i>	10:25 am – 10:50 am
James Coder , University of Tennessee Knoxville, USA <i>PDE-Based Methods for Transition Prediction in Complex Aerodynamic Flows</i>	10:50 am – 11:15 am
Praveen Ramaprabhu , University of North Carolina at Charlotte, USA <i>Shock-driven Hydrodynamic Instabilities: From Clean Energy to Stellar Explosions</i>	11:15 am – 11:40 am
Denis Aslangil , University of Alabama, USA <i>Buoyancy-Driven Variable-Density Turbulence</i>	11:40 am – 12:05 pm

Saturday, May 7th: Minisymposium Sessions A

<u>MA5: Machine Learning in Engineering Simulations</u> Chair: Ted Dickel	Room 3110 Time
William Curtin , EPFL, Switzerland <i>Machine Learning for Metallurgy</i>	10:00 am – 10:25 am
Danny Perez , Los Alamos National Laboratory, USA <i>An Entropy-maximization Approach for the Generation of Training Sets for Machine-learned Potentials</i>	10:25 am – 10:50 am
Christopher Barrett , Mississippi State University, USA <i>Rapid Atomistic Neural Network Potentials: Development and Applications for Atomic Scale Materials Science</i>	10:50 am – 11:15 am
Eric Collins , CAVS, Mississippi State University, USA <i>libANDI: Adaptive N-Dimensional Interpolation Library</i>	11:15 am – 11:40 am
Mashroor Nitol , Los Alamos National Laboratory, USA <i>Machine Learning Models for Predictive Materials Science from Fundamental Physics: An Application to Titanium and Zirconium</i>	11:40 am – 12:05 pm

Saturday, May 7th: Contributed Sessions A

<u>PA1: Contributed Session</u> Chair: Seongjai Kim	Room 3030 Time
Seongjai Kim , Mississippi State University, USA <i>Iterative Update Sample Consensus (IUSAC): A Repeatable Algorithm for Optimal Consensus Set</i>	4:00 pm - 4:20 pm
Zengyan Zhang , Utah State University, USA <i>Structure-preserving Reduced-order Models for Reversible-Irreversible Thermodynamically Consistent PDEs</i>	4:20 pm - 4:40 pm
Victor Bogdan , West University of Timisoara, Romania <i>An image sharpening technique based on dilated filters and 2D-DWT image fusion</i>	4:40 pm - 5:00 pm

Saturday, May 7th: Contributed Sessions A

<u>PA2: Contributed Session</u> Chair: Kobra Rabiei	Room 3050 Time
Sylvia Amihere , The University of Alabama, USA <i>Benchmarking electrostatic free energy of the nonlinear Poisson-Boltzmann model for the Kirkwood sphere</i>	4:00 pm - 4:20 pm
Yiming Ren , The University of Alabama, USA <i>A FFT accelerated high order finite difference method for elliptic boundary value problems over irregular domains</i>	4:20 pm - 4:40 pm
Da Li , The University of Calgary, Canada <i>Incorporating Multiple A Priori Information for Inverse Problem by Inexact Gradient Projection</i>	4:40 pm - 5:00 pm

<u>PA3: Contributed Session</u> Chair: Hyeona Lim	Room 3070 Time
Chartese Jones , The University of Missouri, USA <i>Quarter Match Non-Local Means Algorithm for Noise Removal</i>	4:00 pm - 4:20 pm
Benjamin R Spencer , Indiana University, USA <i>Improvements of Sapiro's Selective Non-Local Means filter method</i>	4:20 pm - 4:40 pm
Shiraz Mujahid , Mississippi State University, USA <i>Parametric study of variational and non-local image denoising methods</i>	4:40 pm - 5:00 pm

<u>PA4: Contributed Session</u> Chair: Ghodsieh Ghanbari	Room 3090 Time
Diana Andone , Politehnica University of Timisoara, Romania <i>Educational Activities for Students' Computational Thinking Skills</i>	4:00 pm - 4:20 pm
Sebastian Avram , Politehnica University of Timisoara, Romania <i>Design and Development of 1st and 2nd order differential filters using numerical simulation with Scattering Parameters</i>	4:20 pm - 4:40 pm
Mircea Gurbina , Politehnica University of Timisoara, Romania <i>Exact Mathematical Analysis of dc-dc Converters Employing PID Controllers</i>	4:40 pm - 5:00 pm

Saturday, May 7th: Contributed Sessions A

<u>PA5: Contributed Session</u> Chair: Adrian Sescu	Room 3110 Time
Omar Es-Sahli , Mississippi State University, USA <i>High-Speed Boundary Layer Optimal Control</i>	4:00 pm - 4:20 pm
Zheng Qiao , Mississippi State University, USA <i>Reduced-order modeling of flame dynamics functions with inlet acoustic modulation</i>	4:20 pm - 4:40 pm
Matthew W Brockhaus , Mississippi State University, USA <i>Model Reduction for Advection Dominated PDEs Using Modal Decomposition</i>	4:40 pm - 5:00 pm

<u>PA6: Contributed Session</u> Chair: Shanti Bhushan	Room 1030 Time
S. Yaser Samadi , Southern Illinois University, Carbondale, IL, USA <i>Dimension Reduction for Multivariate Autoregressive Models</i>	4:00 pm - 4:20 pm
Beverly M Baker , Mississippi State University, USA <i>Computational investigation of GDI injector fouling effects on spray characteristics</i>	4:20 pm - 4:40 pm
Nicolae Herisanu , Politehnica University of Timisoara, Romania <i>Study on heat transfer in MHD viscoelastic fluid of second grade over a stretching porous sheet with electromagnetic effects and nonuniform source/sink</i>	4:40 pm - 5:00 pm

Sunday, May 8th: Minisymposium Sessions B

<u>MB1: Recent Developments in Finite Difference and Finite Element Methods II</u>	Room 3030
Chair: Amanda Diegel	Time
Davood Damircheli , Mississippi State University, USA <i>On a Numerical Solution and Sensitivity Analysis of Timoshenko Beam with Discontinuous Petrov Galerkin Method</i>	10:00 am – 10:25 am
Max Xue , University of North Carolina at Greensboro, USA <i>Convergence Analysis of Non-Monotone Finite Difference Methods for Approximating Viscosity Solutions of Stationary Hamilton-Jacobi Equations</i>	10:25 am – 10:50 am
Satyajith Bommana Boyana , University of North Carolina at Greensboro, USA <i>Symmetric Dual-Wind Discontinuous Galerkin Methods for a Parabolic Obstacle Problem</i>	10:50 am – 11:15 am
Siamak Ghorbani Faal , Worcester Polytechnic Institute, USA <i>Robust BPX Solver for Cahn-Hilliard Equations</i>	11:15 am – 11:40 am
Marcus Sarkis-Martins , Worcester Polytechnic Institute, USA <i>Robust Model Reductions for Elliptic Problems with Heterogeneous High-Contrast Coefficients</i>	11:40 am – 12:05 pm

<u>MB2: Recent Advances in Time-Integration of PDEs II</u>	Room 3050
Chair: Vu Thai Luan	Time
LiLi Ju , University of South Carolina, USA <i>Stabilized Integrating Factor Runge-Kutta Method and Unconditional Preservation of Maximum Bound Principle</i>	10:00 am – 10:25 am
James Lambers , University of Southern Mississippi, USA <i>A Spectral Multistep Method for Time-Dependent PDEs</i>	10:25 am – 10:50 am
Thi Thao Phuong Hoang , Auburn University, USA <i>Low Regularity Integrators for Semilinear Parabolic Equations with Maximum Bound Principles</i>	10:50 am – 11:15 am
Rujeko Chinomona , Temple University, USA <i>Derivation of Stability Optimized IMEX-MRI-GARK Methods</i>	11:15 am – 11:40 am
Alex Fish , Southern Methodist University, USA <i>Adaptive Time Step Control for Infinitesimal Multirate Methods</i>	11:40 am – 12:05 pm

Sunday, May 8th: Minisymposium Sessions B

<u>MB3: Numerical Methods and Models for High Performance Fluid/Structure Computations</u>	Room 3070 Time
Chair: Shanti Bhushan	
William England , ERDC-ITL, USA <i>Multiphysics Coupling Strategies for Hypersonic Aerothermoelasticity</i>	10:00 am – 10:25 am
Seshendra Palakurthy , CAVS, Mississippi State University, USA <i>Analysis of Panel Flutter Dynamics due to Turbulent Shock Wave Boundary Layer Interactions</i>	10:25 am – 10:50 am
Xiaoling Tong , Mississippi State University, USA <i>Algorithm Development of Physics Based Fluid and Dust Simulations on Cartesian Grids for Moving Vehicles</i>	10:50 am – 11:15 am
Wesley Brewer , DoD HPCMP PET/GDIT, USA <i>Scalable Integration of Computational Physics Simulations with Machine Learning</i>	11:15 am – 11:40 am
Mohammed Elmellouki , CAVS, Mississippi State University, USA <i>Numerical Investigation of heat Transfer Characteristics in Liquid Metal Flows</i>	11:40 am – 12:05 pm

<u>MB4: Machine Learning Advances in Healthcare Systems</u>	Room 3090 Time
Chair: Haifeng Wang	
Lir-Wan Fan , University of Mississippi Medical Center, USA <i>Neonatal Inflammation Induces Attention-deficit/hyperactivity Disorder (ADHD)-like Behaviors and Effects on REM Sleep and Homeostatic Responses to Sleep Disturbances in Adolescent Rats</i>	10:00 am – 10:25 am
Chun-An Chou , Northeastern University, USA <i>Data-Driven Modeling and Analysis for Understanding Complex Dynamics of Physiological Networks</i>	10:25 am – 10:50 am
Norma B. Ojeda , University of Mississippi Medical Center, USA <i>Machine Learning to Improve Management of Developmental Delay Associated with Prematurity in a Hospital-based Pediatric Population in Mississippi</i>	10:50 am – 11:15 am
W. Neil Duggar , University of Mississippi Medical Center, USA <i>Machine Learning in Radiation Oncology</i>	11:15 am – 11:40 am
Haifeng Wang , Mississippi State University, USA <i>Brain Network Reorganization for Attention Deficit Hyperactivity Disorder Diagnosis</i>	11:40 am – 12:05 pm

Sunday, May 8th: Minisymposium Sessions B

<u>MB5: Use-Inspired, Data-Driven Modeling in Various Fields</u>	Room 3110 Time
Chair: Jonathan Barlow	
Long Tian , NSPARC, Mississippi State University, USA <i>Workforce Pattern in Mississippi and Next Career Recommendation</i>	10:00 am – 10:25 am
Tony Luczak , NSPARC, Mississippi State University, USA <i>Survey on Using Computer Vision to Push 2D Video to 3D Space</i>	10:25 am – 10:50 am
Yonghua Yan , Jackson State University, USA <i>Study on the Effect of MVG on High-Speed Flows with Different Mach Numbers</i>	10:50 am – 11:15 am
Tianyu Li , NSPARC, Mississippi State University, USA <i>Unemployment Insurance Predictive Analytics with Unbalanced Data</i>	11:15 am – 11:40 am
Patrick Nelsen , NSPARC, Mississippi State University, USA <i>Markerless Human Pose Estimation to Improve Human Pose Estimation: A Work in Progress</i>	11:40 am – 12:05 pm

Sunday, May 8th: Contributed Sessions B

<u>PB1: Contributed Session</u>	Room 3030 Time
Chair: Vu Thai Luan	
Ray Treinen , Texas State University, USA <i>Spectral methods for some capillary surfaces described by generating curves</i>	2:40 pm - 3:00 pm
Jorge Cisneros Paz , University of Washington, USA <i>Split-step methods with finite difference schemes and analytic continuation formulas</i>	3:00 pm - 3:20 pm
Van Hoang Nguyen , Mississippi State University, USA <i>Efficient exponential methods for genetic regulatory systems</i>	3:20 pm - 3:40 pm
Trky Alhsmy , Mississippi State University, USA <i>High-order adaptive exponential Runge—Kutta methods</i>	3:40 pm - 4:00 pm
Xuejian Li , Missouri University of Science and Technology, USA <i>Incremental Proper Orthogonal Decomposition and Its Applications</i>	4:00 pm - 4:20 pm

Sunday, May 8th: Contributed Sessions B

<u>PB2: Contributed Session</u> Chair: Mohammad Sepehrifar	Room 3050 Time
Stefano Di Giovacchino , University of L'Aquila, Italy <i>Numerical mean-square contractivity for stochastic differential equations</i>	2:40 pm - 3:00 pm
Ghodsieh Ghanbari , Mississippi State University, USA <i>A numerical approach for solving time delay fractional-order optimal control problems by using fractional-order Chebyshev wavelets</i>	3:00 pm - 3:20 pm
Kobra Rabiei , Mississippi State University, USA <i>An efficient method to solve the fractional pantograph differential equations using the hybrid of Boubaker polynomials and block-pulse functions</i>	3:20 pm - 3:40 pm
Godlove Appiah , Mississippi State University, USA <i>Computational method of testing shape parameter (β) of the power-law process with applications to reliability system engineering</i>	3:40 pm - 4:00 pm
Tobias Oketch , Mississippi State University, USA <i>Computational Methods for Selecting Priors and Posterior Uncertainty for Single Failure Mode Systems</i>	4:00 pm - 4:20 pm

<u>PB3: Contributed Session</u> Chair: Davood Damircheli	Room 3070 Time
Victor Holotescu , Politehnica University of Timisoara, Romania <i>Building a Blockchain-based Reputation Infrastructure for Open Research. Case study: the EERIS Network</i>	2:40 pm - 3:00 pm
Ludovic Lemle , Politehnica University of Timisoara, Romania <i>On the Lie-Trotter product formula for equicontinuous CO-semi-groups on the dual of a locally convex vector space</i>	3:00 pm - 3:20 pm
Septimiu Lica , Politehnica University of Timisoara, Romania <i>A New Step-Up-Down Quadratic DC-DC Converter</i>	3:20 pm - 3:40 pm
Muguras D Mocofan , Politehnica University of Timisoara, Romania <i>The Water Waves Behavior Evaluation Using an Approach Based on Dynamic Textures</i>	3:40 pm - 4:00 pm
Pisleaga Mihaela , Politehnica University of Timisoara, Romania <i>Analysis of renewable energy supply in Romania in order to transition to a future with zero CO_2 emissions</i>	4:00 pm - 4:20 pm

Sunday, May 8th: Contributed Sessions B

<u>PB4: Contributed Session</u>	Room 3090 Time
Chair: Abdur Rahman	
Abdur Rahman , Mississippi State University, USA <i>Multi-variate Time Series Anomaly Detection through Reinforcement Learning</i>	2:40 pm - 3:00 pm
Yibin Wang , Mississippi State University, USA <i>Prediction of Aircraft Mission Capability using Expirable Attention-Based Network</i>	3:00 pm - 3:20 pm
Timothy Wunrow , Mississippi State University, USA <i>The Effect of Data Availability and Domain Adaptation for Part Certification in Metal-Based Additive Manufacturing</i>	3:20 pm - 3:40 pm
Jinhee Yu , Mississippi State University, USA <i>Speech emotion recognition using convolutional neural networks with self-attention</i>	3:40 pm - 4:00 pm
Lamiae Taoudi , Mississippi State University, USA <i>Crop Yield Prediction Using Machine Learning Techniques</i>	4:00 pm - 4:20 pm

<u>PB5: Contributed Session</u>	Room 3110 Time
Chair: Joonsik Hwang	
Yassine El Marnissi , Mississippi State University, USA <i>Microscopic structure analysis of diesel spray based on high-speed super-resolution image</i>	2:40 pm - 3:00 pm
Alexander S Way , Mississippi State University, USA <i>Vector Autoregressive Models for Predicting Time Dependent Solutions of Partial Differential Equations</i>	3:00 pm - 3:20 pm
Vance Hudson , Mississippi State University, USA <i>Full-Angle Computed Tomography (CT) of Gasoline Spray</i>	3:20 pm - 3:40 pm
Vasile Marinca , Politehnica University of Timisoara, Romania <i>Analytical solutions for unsteady flow of gas through a porous medium by using Optimal Auxiliary Functions Method</i>	3:40 pm - 4:00 pm
Bogdan Marinca , Politehnica University of Timisoara, Romania <i>Solution of Troesch's problem via Optimal Auxiliary Functions Method</i>	4:00 pm - 4:20 pm

Sunday, May 8th: Contributed Sessions B

<u>PB6: Contributed Session</u>	Room 1030 Time
Chair: Shiraz Mujahid	
Sarah Stirrat , University of Strathclyde, Scotland <i>Mapping the parameter space of trailing-edge noise – aero acoustic modelling and optimization</i>	2:40 pm - 3:00 pm
Ciprian Orhei , Politehnica University of Timisoara, Romania <i>Semantic aware urban landmark detection system</i>	3:00 pm - 3:20 pm
Madalina Sofia Pasca , Politehnica University of Timisoara, Romania <i>Analytical approximate solution for the first order nonlinear differential equations using Piecewise Polynomial Least Squares Method</i>	3:20 pm - 3:40 pm
Cristina Laura Sirbu , Politehnica University of Timisoara, Romania <i>Human Emotional State Detection</i>	3:40 pm - 4:00 pm
Silviu Vert , Politehnica University of Timisoara, Romania <i>User Experience of Mobile Augmented Reality Applications in Cultural Heritage: A Case Study on Digital Storytelling with Historical Images in Urban Contexts</i>	4:00 pm - 4:20 pm