

**International Conference on Frontiers of High Energy Physics, Program
Schedule (13-15 February 2025)
Organized by Department of Physics, IIT Bhilai**

Day-1, 13 FEB 2025, Venue-L106, Lecture Hall Complex

| Time Slot | Slot | Title of Talk | Speaker Name | Theme Session Chair/Co-Chair |
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| 8:30 - 9:30 | Registration | | | |
| 9:30 - 10:00 | Inaguration by Director, IIT Bhilai | | | |
| 10:00 - 10:30 | SD1-1 | Probing New Physics with Neutrinos | Frank F Deppisch, University College London, UK | Theme: Neutrino Physics Chair: Prof. Urjit Yajnik |
| 10:30 - 11:00 | SD1-2 | Future of Gravitational Wave Astronomy and LIGO India | Sanjit Mitra, IUCAA, Pune | Theme: DM &GW Chair: Prof. Urjit Yajnik |
| 11:00 - 11:30 | Tea Break | | | |
| 11:30 - 12:00 | SD1-3 | Implications of recent Flavour Anomalies on New Physics | Rukmani Mohanta, University of Hyderabad | Theme: B Physics Chair: Prof. Suchita Kulkarni |
| 12:00 - 12:30 | SD1-4 | Current status of singlet-doublet fermion dark matter | Narendra Sahoo, IIT Hyderabad | Theme: Astrophysics and Cosmology Chair: Prof. Suchita Kulkarni |
| 12:30 - 13:00 | SD1-5 | Detecting gravitational waves with pulsars as | AJIT M SRIVASTAVA, Institute of Physics, Bhubaneswar | Theme: Multi messenger astrophysics Chair: Prof. Anjan Giri |

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| | | resonant Weber detectors | | |
| 13:00 - 13:30 | SD1-6 | Will the topological defects oblige us with observation? | Urjit Yajnik, IIT Gandhinagar | Theme: DM &GW Chair : Prof. Anjan Giri |
| 13:30 - 14:30 | Lunch Break | | | |
| 14:30- 15:00 | SD1-7 | | Reetanjali Maharana, IIT Jodhpur | Theme: Multi messenger astrophysics Chair: Prof. Sanjay Kumar Swain |
| 15:00 - 15:30 | SD1-8 | | Alekha Ch. Nayak, NIT Meghalaya | |
| 15:30- 16:30 | Tea Break & Poster Session | | | |
| 16:30 – 17:00 | SD1-9 | Exploring ultra-light bosons via superradiance: direct and indirect effect | Ujjal Kumar Dey, IISER Berhampur | Theme: Astrophysics and Cosmology Chair: Prof. Swagata Mukherjee |
| 17:00 - 17:30 | SD1-10 | Constructing viable interacting dark matter and dark energy models: a dynamical systems approach | Prasanta K Das, Bits Pillani, GOA Campus | |
| 17:30 - 19:00 | Parallel Session | | | |
| 19:00 onwards | Dinner | | | |

Day-2, 14th FEB 2025, Venue-L106, Lecture Hall Complex

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| 9:00 - 9:30 | SD2-1 | | Bhupal Dev, Washington University St. Louis, USA | Theme: Multi messenger astrophysics Chair: Prof. Rukmani Mohanta |
| 9:30 - 10:00 | SD2-2 | Probing cosmic ray origin with recent results from the GRAPES-3 experiment | Pravat Kumar Mohanty, TIFR, Mumbai | |
| 10:00 - 10:30 | SD2-3 | Physics at LHC | Sanjay Kumar Swain, NISER, Bhubaneswar | Theme: LHC Chair: Prof. Reetanjali Maharana |
| 10:30 - 11:00 | SD2-4 | Dark Matter Induced Loop Corrections to Higgs Mass | Rahul Srivastava, IISER Bhopal | Theme: DM & GW Chair: Prof. Reetanjali Maharana |
| 11:00 - 11:30 | Tea Break | | | |
| 11:30 - 12:00 | SD2-5 | | Amol Dighe, TIFR, Mumbai | Theme: Neutrino Chair: Prof. Frank Deppisch |
| 12:00 - 12:30 | SD2-6 | Exploring Electromagnetic properties of Neutrinos | Sudip Jana, HRI, Prayagraj | |
| 12:30 - 13:00 | SD2-7 | Quark-Gluon Plasma in proton-proton and light-ion collisions | Raghunath Sahoo, IIT Indore | Theme: QGP Chair: Prof. Poonam Mehta |
| 13:00 - 13:30 | SD2-8 | Spin hydrodynamics in relativistic heavy-ion collisions - | Radoslaw Ryblewski, Institute of Nuclear Physics Polish Academy of Sciences, Poland | |

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| | | theory and applications | | |
| 13:30 - 14:30 | Lunch Break | | | |
| 14:30-15:00 | SD2-9 | | Chandan Hati, Valencia University, Spain | Theme: B-Physics Chair: Prof. Amol Dighe |
| 15:00 - 15:30 | SD2-10 | | Anjan Giri, IIT Hyderabad | |
| 15:30 - 16:30 | Tea Break & Poster Session | | | |
| 16:30 - 17:00 | SD2-11 | The State of machine learning in the CMS experiment at the LHC | Swagata Mukherjee, IIT Kanpur | Theme: ML Chair: Prof. Harleen Dahiya |
| 17:00 - 17:30 | SD2-12 | | Poonam Mehta, JNU, Delhi | Theme: Neutrino Physics Chair: Prof. Harleen Dahiya |
| 17:30 - 18:30 | Parallel Sessions | | | |
| 19:00 onwards | Dinner | | | |
| Day-3, 15th FEB 2025, Venue-L106, Lecture Hall Complex | | | | |
| 9:00 - 9:30 | SD3-1 | | Gagan Mohanty, TIFR Mumbai | Theme: B Physics Chair: Prof. Arun Kumar Nayak |
| 9:30 - 10:00 | SD3-2 | Exploring strongly interacting theories | Suchita Kulkarni, University of Graz, Austria | Theme: LHC Phenomenology Chair: Prof. Radoslaw Ryblewski |

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| 10:00 - 10:30 | SD3-3 | Unriddle the Multidimensional Structure of Hadrons using the Light-Front Dynamics | Harlin Dahiya, NIT Jalandhar | |
| 10:30 - 11:00 | SD3-4 | All you want to know about Leptoquarks | Tanumoy Mondal, IISER Thiruvananthapuram | |
| 11:00 - 11:30 | Tea Break | | | |
| 11:30 - 12:00 | SD3-5 | Spin polarization in heavy ion collisions and relativistic spin hydrodynamics | Amaresh Jaishwal, NISER, Bhubaneswar | Theme: QGP Chair: Prof. Raghunath Sahu |
| 12:00 - 12:30 | SD3-6 | In a nutshell, probing Quark-Gluon Plasma using jet quenching in heavy-ion collisions | Nihar Ranjan Sahoo, IISER Tirupati | |
| 12:30 - 13:00 | SD3-7 | Machine Learning Applications at LHC | Aruna Kumar Nayak, Institute of Physics, Bhubaneswar | Theme: ML Chair: Prof. Rahul Srivastava |
| 13:00 - 13:30 | SD3-8 | | Kirtiman Ghosh, Institute of Physics, Bhubaneswar | Theme: Astrophysics and Cosmology Chair: Prof. Rahul Srivastava |
| 13:30 - 14:30 | Lunch Break | | | |
| 14:30 - 16:00 | Parallel Sessions | | | |
| | Summary and Validation | | | |

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| 16:00 Onwards | | |
| Program Summary | | |
| Plenary Talks | Parallel Talks | Student Talks (Total Posters) |
| 30 talks | 7 faculty talks, | 10 (20) |