19th Joint workshop (EC-19) on Electron Cyclotron Emission (ECE) and Electron cyclotron Resonance Heating (ECRH)

4th – 7th April 2016

PROGRAM AGENDA

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Monday, April 4 (Day-1)** | | | | | | | | | | | | | | | | | | |
| Time | | Abstract ID | Title |  | | | Author Name | | |  | | | | | Affiliation | | | |
| From | To |
| **Opening/Welcome Session** | | | | | | | | | | | | | | | | | | |
| 08:30 | 09:30 |  | Registration |  | | |  | | |  | | | | |  | | | |
| 09:30 | 09:40 |  | Inaugural Ceremony |  | | |  | | |  | | | | |  | | | |
| 09:40 | 09:50 |  | Welcome Address by IAC chair |  | | | Egbert Westerhof | | |  | | | | | Chairman, International Advisory committee | | | |
| 09:50 | 10:00 |  | Welcome Address by LOC chair |  | | |  | | |  | | | | | Chairman, Local Organizing Committee, Institute For Plasma Research (IPR),India | | | |
| 10:00 | 10:30 | INV-1 | IPR ECRH Activity |  | | |  | | |  | | | | | Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 | | | |
| 10:30 | 11:00 |  | **STALL INAUGURATION with TEA BREAK** | | | | | | | | | | | | | | | |
|  |  |  |  | | | | | | | | | | | | | | | |
| **ECRH THEORY (Chair : E. Westerhof )** | | | | | | | | | | | | | | | | | | |
| 11:00 | 11:30 | INV2 | EC Power Management in ITER, from the Non-Active Phase to the Demonstration Baseline |  | | | Francesca Poli | | |  | | | | | Princeton Plasma Physics Laboratory,USA | | | |
| 11:30 | 11:50 | THE-O-1 | The Effect of Edge Fluctuations on Electron Cyclotron Waves |  | | | Abhay K. Ram | | |  | | | | | Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139, USA | | | |
| 11:50 | 12:10 | THE-O-2 | Perturbing Microwave Beams by Plasma Density Fluctuations |  | | | Alf Kohn | | |  | | | | | Max Planck Institute for Plasma Physics, Garching, Germany | | | |
| 12:10 | 12:30 | THE-O-3 | Numerical Study on Contribution of Non-Thermal Electrons on ITER ECE Spectrum and an Attempt to Parametrically Correlate it to Non-Thermal Parameters Through Asymmetric Multiple Measurements |  | | | Dr. P.V. Subhash | | |  | | | | | ITER-India, Institute for Plasma Research, Gandhinagar,  Gujarat,INDIA | | | |
| 12:30 | 12:50 | THE-O-4 | Microwave Start-Up of Tokamak Plasmas |  | | | Erasmus J. DuToit | | |  | | | | | York Plasma Institute, Department of Physics, University of York, York, YO10 5DD, UK | | | |
| 12:50 | 13:50 |  | **LUNCH** | | | | | | | | | | | | | | | |
| **ECRH EXPERIMENTS-1 (Chair: J. Lohr)** | | | | | | | | | | | | | | | | | | |
| 13:50 | 14:20 | INV-3 | Experimental Measurement of ECH Deposition Broadening : Beyond Anomalous Transport | | |  | | M.W. Brookman | |  | | | | | UT IFS ,General atomics, ,USA | | | |
| 14:20 | 14:40 | EXP-O-1 | Experimental Study of mm-Wave Scattering by Edge Localized Density Fluctuations in Magnetically Confined Fusion Devices | | |  | | OulfaChellai | |  | | | | | Swiss Plasma Center, EcolePolytechniqueF\_ed\_erale de Lausanne (EPFL), Station 13, CH-1015, Lausanne, Switzerland | | | |
| 14:40 | 15:00 | EXP-O-2 | The ECRH System on ASDEX Upgrade – Selected Physics Experiments and System Upgrade | | |  | | JorgStober | |  | | | | | Max-Planck-InstitutfürPlasmaphysik, Garching, Germany | | | |
| 15:00 | 15:20 | EXP-O-3 | Study of Edge Turbulence in ECRH Driven Slab Annular Plasma in SST-1 | | |  | | Santanu Banerjee | |  | | | | | Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 | | | |
| 15:20 | 15:50 |  | **TEA BREAK** | | | | | | | | | | | | | | | |
| **ECRH EXPERIMENTS-2 (Chair:J. Stober)** | | | | | | | | | | | | | | | | | | |
| 15:50 | 16:20 | INV-4 | Recent Progress of ECRH Plasma in LHD | | |  | | Toru Tsujimura | |  | | | | | National Institute for Fusion Science, Toki 509-5292, Japan | | | |
| 16:20 | 16:40 | EXP-O-4 | Experimental Investigation of the ECRH Stray Radiation during the Start-up Phase in Wendelstein 7-X | | |  | | Dmitry Moseev | |  | | | | | Max-Planck-InstitutfürPlasmaphysik, Greifswald, Germany | | | |
| 16:40 | 17:00 | EXP-O-5 | ECRH Induced Plasma Rotation Dynamics in Open and Closed Magnetic Field Configuration in Tokamak QUEST | | |  | | Kishore Mishra | |  | | | | | IPR,Gandhinagar,India | | | |
| **End of Day-1** | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | |
| **Tuesday, April 5 (Day-2)** | | | | | | | | | | | | | | | | | | |
| **ECRH EXPERIMENTS-3 (Chair: B. Shukla)** | | | | | | | | | | | | | | | | | | |
| 09:00 | 09:30 | INV-5 | First ECRH Plasmas in the Wendelstein 7-X Stellarator | | |  | | T. Stange | | | |  | | | | | Max-Planck-Institute for Plasma Physics, Greifswald, Germany | |
| 09:30 | 09:50 | EXP-O-6 | Protecting Against Damage from Refraction of High Power Microwaves in the DIII-D Tokamak | | |  | | John Lohr | | | |  | | | | | General Atomics, Box 85608, San Diego CA USA | |
| 09:50 | 10:10 | EXP-O-7 | Commissioning and Operation Results of a Long Pulse 140GHz ECRH System on EAST | | |  | | Handong Xu. Xiaojie Wang | | | |  | | | | | Institute of Plasma Physics, Chinese Academy of Sciences, Hefei 230031, China | |
| 10:10 | 10:30 | EXP-O-8 | Status and Test Results of Indigenously Developed 42 GHz, 200 kW, 3 Sec. Gyrotron | | |  | | S. V. Kulkarni | | | |  | | | | | Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 | |
| 10:30 | 11:00 |  | **TEA BREAK** | | | | | | | | | | | | | | | |
| **ECE DIAGNOSTICS (Chair: M. Austin)** | | | | | | | | | | | | | | | | | | |
| 11:00 | 11:30 | INV-6 | 2-D/3-DECEImagingof Locked Mode DynamicsinKSTAR\* | |  | | | Minjun J Choi | | |  | | | | | National Fusion Research Institute, Daejeon 34133, Korea | | |
| 11:30 | 12:00 | INV-7 | Study of Energetic Particle Physics with Advanced ECEI on the HL-2A | |  | | | Dr. Zhongbin Shi | | |  | | | | | Southwestern Institute of Physics, P. O. Box 432, Chengdu 610041, China | | |
| 12:00 | 12:20 | ECE-O-1 | Non-Thermal Electron Momentum Distributions during Electron Cyclotron Current Drive Measured with Electron Cyclotron Emission | |  | | | S. S. Denk | | |  | | | | | Max-Planck-InstitutfürPlasmaphysik, D-85748 Garching, Germany | | |
| 12:20 | 12:40 | ECE-O-2 | Update on the Status of the ITER ECE Diagnostic Design | |  | | | Gary Taylor | | |  | | | | | Princeton Plasma Physics Laboratory, Princeton, NJ 08543, USA | | |
| 12:40 | 13:00 | ECE-O-3 | Testing of the Prototype Receiver for ITER ECE Diagnostic | |  | | | Suman Danani | | |  | | | | | ITER-INDIA  Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 | | |
| 13:00 | 14:00 |  | **LUNCH** | | | | | | | | | | | | | | | |
| **14:00** | **15:30** |  | **POSTER SESSION-1** | | | | | | | | | | | | | | | |
|  |  | THE-P-1 | Self-Consistent Simulation of Electron Cyclotron Power Loss and Kinetics of Electron Cyclotron Resonance Heating in a Tokamak-Reactor | |  | | | P.V. Minashin | | |  | | | | | Tokamak Physics Institute,  NRC Kurchatov Institute, Moscow, 123182, Russia | | |
| THE-P-2 | Numerical evaluation of temperature fluctuations due to NTM in the ECE spectrum using a combination of perpendicular and multiple oblique views | |  | | | Amit Singh | | |  | | | | | ITER-India, Institute for Plasma Research, Gandhinagar,  Gujarat, India | | |
| THE-P-3 | Second Harmonic Generation of Cosh Gaussian Laser Beam in Collisionless Thermal Quantum Plasma with Upward Density Ramp | |  | | | Naveen Gupta | | |  | | | | | National Institute of Technology, Jalandhar, India | | |
| THE-P-4 | [Electron beam generated Argon Plasma in Pasotron device](https://indico.ipr.res.in/indico/abstractManagment.py?abstractId=21&confId=15) | |  | | | NehaKhandelval | | |  | | | | | Devi Ahilya University, Indore (M.P.), India | | |
| THE-P-5 | Trapped Particle Effects On Electron Cyclotron Current Drive | |  | | | J. K. Atul | | |  | | | | | Department of physics, Magadh University, Bodh Gaya - 824234, India. | | |
| EXP-P-1 | Commissioning and Test of the quasi-optical ECRH system of Wendelstein 7-X | |  | | | T. Stange | | |  | | | | | Max-Planck-Institute for Plasma Physics, Greifswald, Germany | | |
| EXP-P-2 | Preliminary Experiments on Real-time Control of Tearing Modes with ECRH in HL-2A | |  | | | Song. Shaodong | | |  | | | | | Southwestern Institute of Physics,china | | |
| EXP-P-3 | Real-Time Neoclassical Tearing Mode Control System using ECRH/ECCD in KSTAR and 2015 Experimental Results | |  | | | Dr. Joung Mi | | |  | | | | | National Fusion Research Institute,South Korea | | |
| ECE-P-1 | Design of a correlation electron cyclotron emission diagnostic for electron temperature fluctuation measurement on EAST | |  | | | H. L. Zhao | | |  | | | | | Institute of plasma physics, Chinese Academy of Sciences, Hefei 230031, China | | |
| ECE-P-2 | Overview of the ECE measurements on EAST | |  | | | Yong Liu | | |  | | | | | Institute of plasma physics, Chinese Academy of Sciences, Hefei 230031, China | | |
| ECE-P-3 | Improved calibration of the DIII-D ECE Michelson interferometer diagnostic | |  | | | M.E. Austin | | |  | | | | | University of Texas, Austin, TX, USA | | |
| ECE-P-4 | Electron Cyclotron emission (ECE) and correlation ECE diagnostics in TCV | |  | | | Matteo Fontana | | |  | | | | | Swiss Plasma Institute, EPFL,Switzerland | | |
| ECE-P-5 | [Characterization of in-house developed high temperature black body source in frequency range 70-1000GHz](https://indico.ipr.res.in/indico/abstractManagment.py?abstractId=27&confId=15) | |  | | | Ravinderv Kumar | | |  | | | | | ITER-India, Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 | | |
| ECE-P-6 | [In-Lab Calibration of Michelson Interferometer Diagnostics for Broadband ECE Measurement](https://indico.ipr.res.in/indico/abstractManagment.py?abstractId=24&confId=15) | |  | | | Abhishek Sinha | | |  | | | | | Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 | | |
| ECE-P-7 | [ECE Measurements at IPR](https://indico.ipr.res.in/indico/abstractManagment.py?abstractId=17&confId=15) | |  | | | VarshaSiju | | |  | | | | | Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 | | |
| ECE-P-8 | Design of Electron Cyclotron Emission Imaging for the J-TEXT Tokamak | |  | | | Dr. Z. J. Yang | | |  | | | | | State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology, Wuhan, Hubei 430074, China | | |
| ECE-P-9 | Electron Bernstein wave heating at the Stellarator TJ-K | |  | | | A.Kohn | | |  | | | | | Max Planck Institute for Plasma Physics, Germany | | |
| 15:30 | 16:00 |  | **Photo Session + TEA BREAK** | | | | | | | | | | | | | | | |
|  |  |  |  | | | | | | | | | | | | | | | |
| 16:00 | 18:30 |  | **Visit to IPR (Institute for Plasma Research)** | | | | | | | | | | | | | | | |
| 19:00 | 21:30 |  | **Cultural Program &Director’s Dinner (IPR Lawns)** | | | | | | | | | | | | | | | |
| **End of Day-2** | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | |
| **Wednesday, April 6 (Day-3)** | | | | | | | | | | | | | | | | | | |
| **ECRH TECHNOLOGY-1 (Chair: J. Jelonnek )** | | | | | | | | | | | | | | | | | | |
| 09:00 | 09:30 | INV-8 | Final Design Review for Russian Gyrotron System for ITER |  | | | | | Grigory Denisov | | | |  | | | | | Gycom Ltd, Nizhny Novgorod, Russia Institute of Applied Physics, Nizhny Novgorod, Russia |
| 09:30 | 09:50 | TECH-O-1 | Progress in Conceptual Design of Demo EC System |  | | | | | S. Garavaglia | | | |  | | | | | Institute of Plasma Physics “P.Caldirola”, National Research Council of Italy, Milan, Italy |
| 09:50 | 10:10 | TECH-O-2 | Design status of the ITER EC H&CD Upper Launcher |  | | | | | D. Strauss | | | |  | | | | | Karlsruhe Institute of Technology, D-76021 Karlsruhe, Germany |
| 10:10 | 10:30 | TECH-O-3 | A design approach to external mode conversion with sensitivity analysis for 42GHz gyrotron |  | | | | | K. Sathyanarayana | | | |  | | | | | Institute for Plasma Research, Gandhinagar District. India |
| 10:30 | 11:00 |  | **TEA BREAK** | | | | | | | | | | | | | | | |
| **ECRH TECHNOLOGY-2 (Chair: B. Plaum )** | | | | | | | | | | | | | | | | | | |
| 11:00 | 11:20 | TECH-O-4 | Series of Powerful CW GYROTRONS in the range 105 – 140 GHZ |  | | | | | E.M.Tai | | | | |  | | | | Gycom Ltd, Nizhny Novgorod, Russia \*Institute of Applied Physics Russian |
| 11:20 | 11:40 | TECH-O-5 | Progress on Eurofusion WP HCD EC Gyrotron R&D and advanced developments for DEMO |  | | | | | John Jelonnek | | | | |  | | | | IHM, Karlsruhe Institute of Technology (KIT), D-76131 Karlsruhe, Germany |
| 11:40 | 12:20 | TECH-O-6 | Remote-Steering Antennas for 140 GHz electron cyclotronheating of the Stellarator W7-X |  | | | | | Carsten Lechte | | | | |  | | | | Institut f. renzflächenverfahrenstechnik und Plasmatechnologie, U. Stuttgart, D-70569 Stuttgart, Germany |
| 12:00 | 12:20 | TECH-O-7 | Status and Recent Results of the European 1 MW, 170 GHz Gyrotron Prototype for ITER |  | | | | | G. Gantenbein | | | | |  | | | | Karlsruhe Institute of Technology (KIT), IHM, Kaiserstr. 12, 76131 Karlsruhe, Germany |
| 12:20 | 12:40 | TECH-O-8 | Anode Modulator Power Supply (AMPS) along with a Crowbar Protection System for 82.6 GHz and 42 GHz Gyrotron |  | | | | | Rajanbabu N. | | | | |  | | | | IPR, Bhat, Gujarat, India |
| 12:40 | 13:40 |  | **LUNCH** | | | | | | | | | | | | | | | |
| 13:40 | 15:40 |  | **POSTER SESSION-2** | | | | | | | | | | | | | | | |
|  |  | TECH-P-1 | Development of ECRH launcher for long pulse operation on EAST |  | | | | | Xiaojie Wang | | | | |  | | | | Institute of Plasma Physics Chinese Academy of Sciences, Hefei 230031, China |
| TECH-P-2 | The design and verification of ECRH polarization control sytem on EAST |  | | | | | Dajun Wu | | | | |  | | | | Institute of Plasma Physics, Chinese Academy of Sciences, Hefei 230031, China |
| TECH-P-3 | Primary window assemblies for microwave diagnostics in ITER |  | | | | | Victor Udintsev | | | | |  | | | | ITER Organization, Route de Vinon sur Verdon, 13115 St Paul-Lez-Durance, France |
| TECH-P-4 | Status of the 60HHz ECRH system on J-TEXT |  | | | | | Donghui Xia | | | | |  | | | | State Key Laboratory of Advanced Electromagnetic Engineering and Technology,  Huazhong University of Science and Technology ,Wuhan, China |
| TECH-P-5 | New Developments for EC Heating diagnostics |  | | | | | Zach. Alexander | | | | |  | | | | University of Stuttgart,Germany |
| TECH-P-6 | Design and Research of Electron Cyclotron Resonance Heating and Current Dive System on HL-2M Tokamak |  | | | | | HUANG, Mei | | | | |  | | | | Southwestern Institute of Physics,China |
| TECH-P-7 | Commissioning of PXI based Data Acquisition and Control system for ECRH |  | | | | | Jatinkumar Patel | | | | |  | | | | Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 |
| TECH-P-8 | Design and Analysis of Steerable ECRH Launcher for SST-1 Tokamak |  | | | | | Hardik Mistry | | | | |  | | | | Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 |
| TECH-P-9 | ITER-India Gyrotron Test Facility (IIGTF): Overview and Status |  | | | | | Vipal Rathod | | | | |  | | | | ITER-India, IPR, Bhat, Gandhinagar, Gujarat, India |
| TECH-P-10 | Prototype Development of Gyrotron Body Power Supply Using HV Switches for ITER-India Gyrotron Test Facility(IIGTF |  | | | | | Sharan Dilip | | | | |  | | | | ITER-India, IPR, Bhat, Gandhinagar, Gujarat, India |
| TECH-P-11 | Overview and Status of Local Control Unit for ITER-India Gyrotron Test Facility (IIGTF) |  | | | | | Ronak Shah | | | | |  | | | | ITER-India, IPR, Bhat, Gandhinagar, Gujarat, India |
| TECH-P-12 | Gyrotron Output RF Beam Diagnostics for ITER-India Gyrotron Test Facility (IIGTF) |  | | | | | Anjali Sharma | | | | |  | | | | ITER-India, IPR, Bhat, Gandhinagar, Gujarat, India |
| TECH-P-13 | [Design & status of EC Main High Voltage Power Supply for ITER & Indian Test program](https://indico.ipr.res.in/indico/abstractManagment.py?abstractId=22&confId=15) |  | | | | | DarshankumarParmar | | | | |  | | | | ITER-India, IPR, Bhat, Gandhinagar, Gujarat, India |
| TECH-P-14 | [Proposal of Mode Selection Criterian for Advanced KDEMO Gyrotron](https://indico.ipr.res.in/indico/abstractManagment.py?abstractId=29&confId=15) |  | | | | | AshwiniSawant | | | | |  | | | | Ulsan National Institute of Science and Technology (UNIST) ,  Republic of Korea) |
| TECH-P-15 | [The Experimental Verification of Gaussian Beam Coupling for ECH Transmission Line at 400 GHz](https://indico.ipr.res.in/indico/abstractManagment.py?abstractId=30&confId=15) |  | | | | | ChoeMunSeok | | | | |  | | | | School of Natural Science  Republic of Korea, |
| TECH-P-16 | Design of C-Band Slot Coupled profiled Orthomode Transducer (OMT) |  | | | | | Hetshree Shah | | | | |  | | | | IPR, ISRO, Ahmedabad, Gujarat |
| TECH-P-17 | Instrumentation and control system architecture of ECRH SST1 |  | | | | | Harshida Patel | | | | |  | | | | Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India -382428 |
| TECH-P-18 | Development status and plan of KSTAR ECH |  | | | | | J. H. Jeong | | | | |  | | | | Republic of Korea |
| 15:40 | 16:10 |  | **TEA BREAK** | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | |
| 16:10 | 19:00 |  | **Local Sight Seeing** | | | | | | | | | | | | | | | |
| 19:00 | 21:30 |  | **Traditional Dinner at a Heritage Restaurant (Vishala)** | | | | | | | | | | | | | | | |
| **End of Day-3** | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | |
| **Thursday, April 7 (Day-4)** | | | | | | | | | | | | | | | | | | |
| **ECRH TECHNOLOGY-3 (Chair: G. Denisov)** | | | | | | | | | | | | | | | | | | |
| 09:00 | 09:30 | INV-9 | Design and R&D for the ITER Stray Radiation Bolometers |  | | | | | Hans Oosterbeek | | | |  | | | | | Eindhoven University of Technology P.O. box 513 5600 MB Eindhoven The Netherlands |
| 09:30 | 09:50 | TECH-O-9 | Design, Development & Functional Validation of Magnets system in support of 42 GHz Gyrotron in India |  | | | | | Subrata Pradhan | | | |  | | | | | IPR,Gandhinagar,INDIA |
| 09:50 | 10:10 | TECH-O-10 | Design and Development of 42 GHz, 200 kW Gyrotron for plasma fusion research at IPR, Gandhinagar |  | | | | | N.K. Singh | | | |  | | | | | Gyrotron Lab, MWT Area, CSIR-CEERI, Pilani, Rajasthan- 333 031 |
| 10:10 | 10:30 | TECH-O-11 | Overview & Status Of ITER-INDIA EC RF Source Package for ITER |  | | | | | S.L.Rao | | | |  | | | | | ITER-India, Institute for Plasma Research, Bhat, Gandhinagar |
| 10:30 | 11:00 |  | **TEA BREAK** | | | | | | | | | | | | | | | |
| **SUMMARY (Chair: B. Shukla)** | | | | | | | | | | | | | | | | | | |
| 11:00 | 11:20 |  | ECRH Theory |  | | | | | E. Westerhof | | | | |  | | | | FOM-Institute DIFFER, Dutch Institute for Fundamental Energy Research, 5600 HH, Eindhoven, The Netherlands |
| 11:20 | 12:00 |  | ECRH Experiments |  | | | | | J. Lohr | | | | |  | | | | General Atomics, Box 85608, San Diego CA USA, |
| 12:00 | 12:20 |  | ECE Diagnostics |  | | | | | M. Austin | | | | |  | | | | University of Texas, Austin, TX, USA |
| 12:20 | 13:00 |  | ECRH Technology |  | | | | | B. Plaum | | | | |  | | | | University Stuttgart |
| 13:00 | 14:00 |  | **LUNCH** | | | | | | | | | | | | | | | |
| **CONCLUDING SESSION** | | | | | | | | | | | | | | | | | | |
| 14:00 | 15:40 |  | **IAC-EC Meeting/ Any Other business / Meeting Closure** | | | | | | | | | | | | | | | |
| 15:40 | 16:00 |  | **TEA BREAK** | | | | | | | | | | | | | | | |
| **End of Day-4** | | | | | | | | | | | | | | | | | | |