SAZERAC 21 cm 2022
PROVISIONAL PROGRAMME

Dates: March 14-17, 2022

Note that most of North America will switch to daylight saving time the day before the start of the conference.

Updates on experiments and observations 1

Time: Day 1, 15:00 - 16:50 GMT / 8:00 - 9:50 PDT / 11:00 - 12:50 EDT
Chair: Ronniy Joseph (McGill University)

Schedule:

- 15:00 - 15:30 Matt Dobbs (invited), McGill University, Observations of the 21cm signal at low redshift

Break (15 mins)

- 15:45 - 16:00 Devin Crichton, ETH Zürich, HIRAX: Status and Systematics
- 16:00 - 16:20 Shilpa Ranchod (invited), Max Planck Institute for Radio Astronomy, HI in and lensed by the HFF clusters: A deep MeerKAT search
- 16:20 - 16:35 Wenkai Hu, LAM - Laboratoire d'Astrophysique de Marseille, Extending the HI survey limit to higher redshifts using FAST
- 16:35 - 16:50 Peter Timbie, University of Wisconsin – Madison, The Tianlai Dish Array

Updates on experiments and observations 2

Time: Day 1, 17:30 - 19:50 GMT
Chair: Wenkai Hu (Laboratoire d'Astrophysique de Marseille)

Schedule:

- 17:30 - 18:00 Aaron Parsons (invited), Berkeley, 21 cm observations at high redshift

Break (15 mins)

- 18:15 - 18:35 Bharat Gehlot, Kapteyn Institute, University of Groningen, Degree-Scale Galactic Radio Emission at 122 MHz around the North Celestial Pole with LOFAR-AARTFAAC
- 18:35 - 18:50 Hugh Garsden, Queen Mary University of London, 21 cm power spectrum at 48 MHz (z = 28) from the Owens Valley Long Wavelength Array
- 18:50 - 19:05 Kelly Foran, McGill University, A Progress Report on PRIZM Data Analysis and Calibration
- 19:05 - 19:20 Jeffrey Peterson, Carnegie Mellon University, The High-Z 21-cm Global Spectrometer
- 19:20 - 19:35 Nicholas Kern, MIT, First Limits from HERA: Advancements in Systematic Modeling and Power Spectrum Estimation For More Robust Limits
- 19:35 - 19:50 Josh Dillon, UC Berkeley, What's Next for the Hydrogen Epoch of Reionization Array?

Characterisation and mitigation of foregrounds

Time: Day 2, 9:00 - 10:50 GMT
Chair: José Fonseca (Universidade do Porto)

Schedule:

- 9:00 - 9:20 Saurabh Singh (invited), Raman Research Institute, On the detection of a cosmic dawn signal in the radio background
- 9:20 - 9:35 Jaiden H Cook, ICRAR, Investigating the contribution of extended radio sources in the EoR power spectrum
- 9:35 - 9:50 Ce Sui, Tsinghua University, Identification of Low-intensity Radio Frequency Interference with Machine Learning

Break (15 mins)

- 10:05 - 10:20 Michael Pagano, McGill University, Accounting for uncertainties in the low-frequency radio sky maps in REACH Global 21 cm signal analysis
- 10:20 - 10:35 Elimboto Yohana, Dar Es Salaam University College of Education, Recovering the 21-cm signal from simulated FAST intensity maps
- 10:35 - 10:50 Haochen Wang, MIT, A Systematics-Robust 21 cm Foreground Removal Algorithm

Instrumental characterisation, modelling and calibration

Time: Day 2, 15:00 - 16:45 GMT
Chair: Bharat Gehlot (Kapteyn Institute)

Schedule:

- 15:00 - 15:30 H. Cynthia Chiang (invited), McGill University, Instrument characterization for 21cm intensity mapping arrays

Break (15 mins)

- 15:45 - 16:00 Ian Roque, University of Cambridge, Advanced Bayesian calibration pipeline for global 21-cm experiments
- 16:00 - 16:15 Hyoyin Gan, Kapteyn Astronomical Institute, Comparison of direction dependent calibration performance of DDECal and SAGECal in the LOFAR-EoR context
- 16:15 - 16:30 Ian Hendricksen, McGill University, Prototyping for the Canadian Hydrogen Observatory and Radio transient Detector with the Deep Dish Development Array
- 16:30 - 16:45 Joelle-Marie Begin, McGill University, Developments on a new low-noise amplifier and antenna for ALBATROS

Cross-correlations between the 21-cm line and other signals 1

Time: Day 2, 17:45 - 19:30 GMT
Chair: Stefano Camera (University of Turin)

Schedule:

- 17:45 - 18:15 Jordan Mirocha (invited), McGill University, Cross-correlations in the EoR: expectations, latest results, and future prospects

Break (15 mins)

- 18:30 - 18:45 Rahul Kannan, Harvard University, Predictions for multi-tracer line intensity mapping in the epoch of reionization
- 18:45 - 19:00 Hannah Fronenberg, McGill University , An End-to-End Pipeline For 21 cm x LIM Cross-Correlations
- 19:00 - 19:15 Eli Visbal, University of Toledo, Cross-Correlation of 21cm Observations and JWST Pencil-Beam Galaxy Surveys
- 19:15 - 19:30 Paul La Plante, UC Berkeley, 21cm, the CMB, and Galaxies during Reionization: Three Sides of the Same Coin

Analytical and numerical modelling of the signal 1

Time: Day 3, 9:00 - 10:45 GMT
Chair: Sambit Giri (University of Zurich)

Schedule:

- 9:00 - 09:30 Anastasia Fialkov (invited), Cambridge University, Theoretical modelling at high redshift

Break (15 mins)

- 09:45 - 10:00 Yidong Xu, National Astronomical Observatories, Chinese Academy of Sciences, Effects of Small-scale Absorption Systems on Neutral Islands during the Late Epoch of Reionization
- 10:00 - 10:15 Aishrila Mazumder, Indian Institute of Technology Indore, End-to-end simulation pipeline for sensitive Interferometric Observations
- 10:15 - 10:30 Barun Maity, NCRA-TIFR, Efficient Modelling of Cosmic Reionization using SCRIPT
- 10:30 - 10:45 Joe Lewis, University of Heidelberg, The signature of galaxy formation models in the 21cm line

Theoretical and observational constraints

Time: Day 3, 11:45 - 13:35 GMT
Chair: Suman Chatterjee (NCRA-TIFR)

- 11:45 - 12:00 Anshuman Tripathi, Indian Institute Of Technology Indore (IIT Indore), Extracting the HI 21cm signal from CD/EoR from ground-based observations using Artificial Neural Networks
- 12:00 - 12:15 Isabella Paola Carucci, University of Turin, Blind Foreground Subtraction Challenge for SKAO HI Intensity Mapping
- 12:15 - 12:30 Janakee Raste, TIFR, Mumbai, Implications of the z ~ 5–6 Lyman-α forest for 21cm Experiments

Break (15 mins)

- 12:45 - 13:00 Harry Thomas Jones Bevins, Cavendish Astrophysics, University of Cambridge, A comprehensive Bayesian re-analysis of the SARAS2 data from the Epoch of Reionization

- 13:00 - 13:15 Charlotte Mason, DAWN, University of Copenhagen, Inferring astrophysics and cosmology at Cosmic Dawn using 21cm observations
- 13:15 - 13:35 Stefan Heimersheim, Julian Muñoz, Yuxian Qin (invited), Theoretical Interpretation of the First HERA upper limits

Analytical and numerical modelling of the signal 2

Time: Day 3, 15:00 - 16:45 GMT
Chair: Caroline Heneka (University of Hamburg)

Schedule:

- 15:00 - 15:30 Alkistis Pourtsidou (invited), University of Edinburgh, 21cm intensity mapping: from pathfinder data analysis to future surveys preparation

Break (15 mins)

- 15:45 - 16:00 Stefano Camera, University of Turin, Baryon acoustic oscillations from HI intensity mapping: the importance of cross-correlations in the monopole and quadrupole
- 16:00 - 16:15 Ivelin Georgiev, The Oskar Klein Centre, Department of Astronomy at Stockholm University, Impact of the Mean Free Path on the Large Scale 21-cm Power Spectrum from Reionization
- 16:15 - 16:30 Zhaoting Chen, Jodrell Bank Centre for Astrophysics, Interferometric Intensity Mapping in the Low-Redshift Universe
- 16:30 - 16:45 Thomas Gessey-Jones, University of Cambridge, Probing the First Stars with the Cosmic Dawn 21-cm Signal

Cross-correlations between the 21-cm line and other signals 2

Time: Day 4, 15:00 - 16:50 GMT
Chair: Isabella Carucci (University of Turin)

Schedule:

- 15:00 - 15:15 Denis Tramonte, Purple Mountain Observatory (PMO), The neutral cosmic web from stacks on 21-cm intensity maps
- 15:15 - 15:30 Melis Irfan, University of the Western Cape, MeerKLASS: large area 21cm intensity mapping using the MeerKAT array
- 15:30 - 15:45 Caroline Heneka, University of Hamburg, Learning the 21cm signal - From sources to tomography

Break (15 mins)

- 16:00 - 16:15 Ian Hothi, Imperial College, Synergies between interferometers and upcoming surveys, to study the end of the EoR
- 16:15 - 16:30 Steve Cunnington, University of Edinburgh, MeerKAT HI intensity mapping cross-correlations with overlapping galaxy surveys at z~0.4
- 16:30 - 16:50 Seth Siegel (invited), McGill University, Detection of 21cm Emission from Large-scale Structure with CHIME

Prospects for lunar and space-based observations

Time: Day 4, 20:00 - 21:50 PDT Thursday March 17th / 3:30 - 5:15 GMT Friday March 18th

Chair: Udaya Shankar Narayana Rao

- 3:30 - 4:00 Gregg Hallinan (invited), Caltech, Space-based observations

Break (15 mins)

- 4:15 - 4:30 Xuelei Chen, National Astronomical Observatories, Chinese Academy of Science, Discovering the Sky at the Longest wavelength using lunar orbit array
- 4:30 - 4:45 Yuan Shi, National Astronomical Observatories, Chinese Academy of Science, Lunar Orbit Measurement of Cosmic Dawn 21 cm Global Spectrum
- 4:45 - 5:00 Fengquan Wu, National Astronomical Observatory, Beijing, China, Measuring 21cm global spectrum on the lunar orbit and its ground testing
- 5:00 - 5:15 Mayuri S. Rao, Raman Research Institute, PRATUSH : a proposed Indian lunar orbiter experiment for studying the Cosmic Dawn