Timetable Learning the high-redshift Universe

February 2 - 4, 2022

Day 1 (February 2)

UTC	Speaker	Title
15:00–15:10	Login, “Hi, how are you?”, “I am muted?”	
15:10–15:25	Welcome	
15:25–15:55	Introduction by Charlotte Mason *“Constraining reionization from observations of galaxies”*	
15:55–16:00	Buffer/Break	
Session 1		
16:00–16:15	L.Y. Aaron Yung	*Paving the way for JWST and Roman with Theory and Simulations*
16:15–16:30	Vladan Markov	*Constraining the ISM properties of high-z galaxies using carbon lines and statistical model*
16:30–16:45	Nashwan Sabti	*GALLUMI: A Galaxy Luminosity Function Pipeline for Cosmology and Astrophysics*
16:45–17:00	Lena Lenz	*Automated methods to find the most distant quasars*
17:00-17:15	Coffee Break	
Session 2		
17:15–17:30	Romain Meyer	*Learning (from) quasar spectra with VAEs*
17:30–17:45	Rodrigo Carvajal	*High-redshift Radio Galaxies candidates prediction with ensemble Machine Learning*
17:45–18:00	Intae Jung	*Predicting Lyman-alpha Emission from Reionization-Era Galaxies with a Supervised Machine Learning*
18:00–18:15	Chris Byrohl	*Decoding LAE spectra and Lyman-alpha halos*
18:15–18:30	Benne Holwerda	*Probabilistic selection of high-redshift candidate galaxies from imaging*
18:30-18:40	Final words	

Day 2 (February 3)

UTC	Speaker	Title
15:55–16:00	Login, “Hi, how are you?”, “I am muted?”	
16:00–16:05	Welcome	
16:05–16:35	Introduction by Francisco Villaescusa-Navarro *“The role of simulations and machine learning in astrophysics”*	
16:35–16:40	Buffer/Break	
Session 1		
16:40–16:55	Mosima Masipa	*Accelerating reionization simulations and deriving optimal summary statistics with autoencoders*
16:55–17:10	Chris Lovell	*Testing hydro simulations in a new regime by learning the galaxy-halo relationship at high-z*
17:10–17:25	Kyungjin Ahn	*Probing the Early History of Reionization by Cosmic-Variance Limited CMB Experiments*
17:25–17:40	Flash Talks	
17:40-18:00	Coffee Break	
Session 2		
18:00–18:15	Steffen Neutsch	*Inferring Astrophysics and Dark Matter Properties from 21cm Tomography using Deep Learning*
18:15–18:30	Ming-Feng Ho	*Multi-Fidelity Emulation for Cosmological Simulations*
18:30–18:45	Barun Maity	*Efficient Modelling of Cosmic Reionization using SCRIPT*
18:45–19:00	Atrideb Chatterjee	*CosmoReionMC: A parameter estimation package using Reionization and Cosmic dawn observations*
19:00–19:15	Thomas Binnie	*Improving Bayesian analyses of the EoR and how the 21cm line can probe preliminary structure growth*
19.15-19.25	Final words	

Day 3 (February 4)

UTC	Speaker	Title
03:55–04:00	Login, “Hi, how are you?”, “I am muted?”	
04:00–04:05	Welcome	
04:05–04:35	Introduction by Cathryn Trott *“Extracting information from Murchison Widefield Array EoR data”*	
04:35–04:40	Buffer/Break	
Session 1		
04:40–04:55	Shingo Tanigawa	*Photometric Redshift Estimation via Machine Learning from Simulations*
04:55–05:10	Kana Moriwaki	*Deep learning for line de-confusion in large-scale line intensity maps*
05:10–05:25	Nicha Leethochawalit	*Completeness Correction methods and Biases in UV Luminosity Function determinations*
05:25–05:40	Xiaosheng Zhao	*Simulation-Based Inference of Reionization Parameters From 3D Tomographic 21 cm Lightcone Images*
05:40–05:55	Yuan-Sen Ting	*A new approach to observational cosmology using the scattering transform*
05:55-06:10	Coffee Break	
Session 2		
06:10–06:25	Miftahul Hilmi	*Contamination of z~8 Lyman Break Galaxies in the Hubble Data: Correlation with z~2 Balmer Break Galaxies*
06:25–06:40	Ilya Khrykin	*The first measurement of the quasar lifetime distribution*
06:40–06:55	Yihao Zhou	*Understanding the Impact of Semi-Numeric Reionization Models when using CNNs*
06:55–07:10	Balu Sreedhar	*Monte Carlo augmentation applied to N-body simulations for semi-analytic modelling*
07:10–07:25	Shifan Zuo	*tbc*
07:25-07:35	Final words	

Day 3 (February 4)

UTC	Speaker	Title
15:55–16:00	Login, “Hi, how are you?”, “I am muted?”	
Session 3		
16:00–16:15	Ivan Nikolić	*Inferring reionization and galaxy properties from the patchy kinetic Sunyaev-Zel'dovich signal*
16:15–16:30	Florent Mertens	*ML-enhanced foreground mitigation methods for 21-cm experiments*
16:30–16:45	Saba Etezad Razavi	*Constraining IGM's temperature fluctuations between redshift 3 and 4 using XQ100*
16:45–17:00	Christian Hellum Bye	*Very Accurate 21-cm Global Signal Emulation with 21cmVAE*
17:00–17:15	Coffee Break	
Session 4		
17:15–17:30	Sudipta Sikder	*Machine learning to decipher the astrophysical processes at cosmic dawn*
17:30–17:45	Harry Thomas Jones Bevins	*GLOBALEMU: A novel and robust approach for emulating the sky-averaged 21-cm signal from the cosmic dawn and epoch of reionisation*
17:45–18:15	Discussion	
18:15–18:30	Final words	