

Synthetic Universes for Future Surveys

1st SURFS Workshop, March 21/22 2013, ICRAR/UWA

Programme – Thursday, 21st March

08:45	Registration Desk Open	
09:30	Opening Remarks	Chris Power (ICRAR/UWA)
	Theme #1: Techniques : State-of-the-Art Modelling	<i>Chair – Geraint Lewis</i>
09:35	Galaxy Formation Models: Past, Present & Future	Andrew Benson (Carnegie Observatories)
10:15	Galaxy Formation Models: Gas in Galaxies	Claudia Lagos (ESO)
10:40	Formation History Model of Galaxy Stellar Mass Growth	Simon Mutch (U Melbourne)
11:00	Morning Tea & Coffee	
		<i>Chair – Alan Duffy</i>
11:20	Structure Finding in Cosmological Simulations	Alexander Knebe (UA Madrid)
11:50	Convergence Requirements for Merger Tree Construction	Greg Poole (U Melbourne)
	Theme #2: Techniques : Synthetic Universes	
12:10	Building Model Universes in the “Cloud”: the Theoretical Astrophysics Observatory	Darren Croton (Swinburne)
12:40	Durham Lightcones: Synthetic Galaxy Survey Catalogues from GALFORM	Jo Woodward (Durham)
13:00	Lunch	
	Theme #3: Cold Gas in Galaxies & The Radio Sky I	<i>Chair – Greg Poole</i>
13:40	Modelling HI & CO in Cosmological Simulations	Danail Obreschkow (ICRAR/UWA)
14:05	Future HI Surveys – Observational Overview	Martin Meyer (ICRAR/UWA)
14:30	Future Neutral Hydrogen Surveys with ASKAP	Alan Duffy (U Melbourne)
14:50	Afternoon Tea & Coffee	
		<i>Chair – Lister Staveley-Smith</i>
15:10	Observing Synthetic Universes with ASKAP & BETA	Matthew Whiting (CSIRO)
15:30	Constant Stability Discs: A Tool for Modelling the Distribution of Gas and Star Formation in Galaxies	Gerhardt Meurer (ICRAR/UWA)
15:45	Ram Pressure Stripping & HI Radial Profiles	Daniel Cunnam (U Western Cape)
	Theme #4: The Radio Sky II	
16:00	Why we need to model EMU	Ray Norris (CSIRO)
16:20	Observational Constraints from Large-Area Radio Continuum Surveys	Elaine Sadler (SIfA, U Sydney)
16:40	End of Day 1	
17:00	Live Streaming Planck Press Conference (ICRAR)	
18:30	Dinner at “The Curry Tree” Indian Restaurant, Nedlands	

Programme – Friday, 22nd March

Theme #5: The Optical Sky

Chair – Daniel Cunnama

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| 09:00 | The SAMI Galaxy Survey & IFU Science | Geraint Lewis (SIfA Sydney) |
| 09:25 | The GAMA (Galaxy and Mass Assembly) Survey | Aaron Robotham (ICRAR/UWA) |
| 09:50 | Why we need you: confessions of an end user | Eyal Kazin (Swinburne) |
| | The Star Formation History in Hierarchical Models: | |
| 10:10 | Brightest Cluster Galaxies, Passive Evolution and Dark Energy Surveys | Chiara Tonini (Swinburne) |
| 10:30 | Morning Tea & Coffee | |

Theme #6: The High Redshift Universe

Chair – Stuart Wyithe

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| 10:50 | Observing the EoR with the MWA | Randall Wayth (Curtin) |
| 11:10 | Lyman- α Emission as a Powerful Tool to detect high-redshift star forming galaxies | Thibault Garel (Swinburne) |
| 11:30 | Ionization Structure and 21-cm Power Spectrum with Realistic Galaxy Formation Models | Hansik Kim (U Melbourne) |
| | Predictions of Cross-Power Spectrum between 21cm emission and galaxies from hierarchical galaxy formation models | Jaehong Park (U Melbourne) |
| 11:50 | Dark Matter Particle Physics in Cosmological Simulations | Katherine Mack (U Melbourne) |
| 12:10 | Effect of IGM on the observability of Lyman α Emitters | Akila Jeesson-Daniel (U Melbourne) |
| 12:30 | around EOR | |
| 12:50 | Cosmological Simulations with GADGET3: Update | Edoardo Tescari (U Melbourne) |
| 13:10 | Lunch | |

Theme #7: Testing Non-Standard Cosmologies

Chair – Katherine Mack

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| 14:00 | Testing Cosmological Anomalies with Light Tracing and Modified Gravity | Krzysztof Bolejko (SIfA, U Sydney) |
| 14:20 | A Novel Approach to Quantifying Dark Matter Halo Structure | Steven Murray (ICRAR/UWA) |

Theme #8: The Future

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| 14:35 | Breakaway Discussion Groups | Various |
| 15:15 | Afternoon Tea & Coffee | |
| 15:35 | Presentation of Key Discussion Points – Joint Projects | Various |
| 16:15 | End of Day 2 & Close | |

Participants

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