

Below we provide a preliminary program for  
[HEAVYMETAL IV: Neutron star mergers and the origin of the r-process](#)

Theme-titles for individual sessions is indicative of topics discussed, but not exhaustive for the diversity in each session.

Monday - 5th of May:

9: Darach Watson 'Welcome, opening remarks and overview'

9-12: Stellar spectroscopy & GCE:

- Freeke van de Voort 'r-process enrichment in cosmological simulations'
- Camilla Hansen 'New observations of heavy elements in old metal poor stars'

GRB-associated KN

- Andrew Levan 'Kilonovae in gamma-ray bursts'
- Om Sharan Salafia 'Gamma-ray bursts from compact binary mergers'
- Morgan Fraser 'TBD'

14:30 - 17 - KN spectral features:

- Nanae Domoto 'Signatures of heavy elements in kilonova photospheric spectra'
- James Gillanders 'TBD'
- Albert Snepken 'Observational limits on helium abundance in AT2017gfo'
- Aayush Arya; 'Strontium line features trace the AT2017gfo kilonova ejecta structure'

Tuesday - 6th of May:

9-12 - RT

- Anders Jerkstrand 'Spectral synthesis modelling of kilonovae, and opportunities with JWST'
- Luke Shingles 'Radiative Transfer for NSMs with realistic masses'
- Blanka Vlaagos 'Spectral modelling of kilonovae in 3D NLTE'
- Fiona McNeill 'Using new atomic data in kilonova modelling'
- Andreas Floers 'Calibrated Forbidden Lanthanide Emission Lines'

14:00 - 23:00

Afternoon excursion & conference dinner

Wednesday - 7th of May:

9-12 - Atomic Data

- Leo Mulholland 'Atomic Data for Kilonovae'
- Rasmus Damgaard 'Machine Learning in atomic data synthesis'
- Michael McCann 'TBD'
- Kirsten Dowd 'TBD'
- Hope Dannar 'Dual-Comb Spectroscopy of Heavy Metals'
- Steven Bromley 'Metastable-resolved Ionization and Recombination Properties of Te I - III'

- Stephan Fritzsche      'Atomic cascade computations for astro and plasma physics'

14:30 - 17:00: Stellar hydro

- Thomas Janka      'Outflows from White Dwarfs Collapsing to Neutron Stars'  
- Ruediger Pakmor      'Double white dwarf mergers revisited'  
- Tobias Fischer      'Equation of state for hot and dense matter in astrophysical simulations'  
- Noshad Lagarni      'Universal relations for rapidly rotating cold and hot hybrid star'

Thursday - 8th of May:

Morning program (9-12): Experimental Section

- John Costello (DCU)      'One Colour Multiphoton Ionization and Two Colour Photoionization Control at Free Electron Lasers - Neon and Acetylene'  
- Dave Riley (QUB)      'Experimental Work on line-identifications QUB'  
- Elizabeth Den Hartog      'Experimental Transition Probabilities for Singly Ionized Lanthanides'  
- Eoin + Chandan      'KLab Update'  
- Lucero + Eanna      'Long Lab Update'  
- David + Lynda      'Theory Update'

14:30-17:00: Neutrinos and nucleosynthesis

- Irene Tamborra      'Neutrinos in and from r-process sources'  
- Zewei Xiong      'neutrino oscillations or nucleosynthesis'  
- Yong Zhong Qian      'r-process nucleosynthesis and multimessenger astrophysics'  
- Stephane Goriely      'progress in the modelling of nuclear inputs for r-process nucleosynthesis'  
- Samuel Giuliani      'Nuclear masses and r-process nucleosynthesis'

Friday - 9th of May:

9-12: Merger hydro

- Oliver Just      'Neutron-star merger modelling'  
- Vimal Vijayan      'TBD'  
- Georgios Lioutas      'TBD'  
- Andreas Bauswein      'Finding hyperons in neutron stars'  
- Tiamur      'Data procurement and management'

11:30 Concluding remarks by Stuart Sim