Science Activity Updates

• SKA IGO ratification/First Council Meeting (Robert)
  • Five ratifications complete as of 15 Dec. (NL, AU, ZA, IT, PT)
  • Anticipate UK announcement on 16 December
  • Planned First Council meeting late January 2021

• Next Science Meeting (Anna)

• Next Science Data Challenge (SDC2) (Philippa)

• General access to SWG-specific talks/meeting (Robert)

• AOB
SKA Science 2021

• 15-19 March 2021, virtual event
• Using the OnAir platform
• Plenary talks:
  • Abstract submission to open through the OnAir platform **this week**, deadline for abstract submission **20th January**
  • Plenary talks pre-recorded, with live Q&A sessions, repeated in different time zones
• Splinter meetings
  • Organised independently by the SWGs
  • Live talks/ discussions, time zones set based on SWG geographical spread
• Poster sessions
  • We are exploring solutions for an effective virtual poster session experience
A comprehensive list of keywords can be used to better identify the type of content

**Themes**

Choose a theme for your abstract from the list below

**List of categories**

- Cosmology
- Cradle of Life
- Epoch of reionization/ Cosmic Dawn
- Extragalactic Continuum
- Extragalactic spectral line
- Gravitational waves
- High energy cosmic particles
- Hi galaxy science
- Magnetism
- Our Galaxy
- Pulsars
- Solar, Heliospheric & Ionospheric physics
- Transients
- VLBI
- Instrumentation
- Data analysis
SDC2 timeline

• October 31^{st}: Close the expressions of interest call
• Mid November: Open challenge registration
  Pair teams and resources
  Test dataset transfer and scoring code
• December: Validation cube available
• January 15^{th}: Challenge processing begins
• July 15^{th}: Challenge ends
  Winners announced
  Feedback sought from participants
  Feedback sought from facilities
• (Fairly) big data

Integration time = 2000h
Spatial resolution = 7 arcsec
Frequency resolution = 30 kHz
RMS per channel 13-18 μJy

FoV = 20 square degrees
Frequency = 950 MHz – 1150 MHz (z = 0.25 to 0.5)
Data volume = 1 TB

Test cube: ~ 30 arcmin across
Telescope simulation

Add noise, partially dirty beam and imperfect continuum subtraction (MIRIAD)

SKA MID band 2 spectral line observation

SKA MID continuum 1200 MHz
Registration now open

sdc2.astronomers.skatelescope.org/sdc2-challenge

Challenge registration

Team details

Please provide your team name *

Please provide the names and emails of each team member *

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Country</th>
<th>email</th>
<th>Team leader</th>
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Description of the Challenge

SDC2 is a source finding and source characterisation data challenge on a simulated SKA HI data product.

Summarised details of the simulated data can be found [here](https://sdc2.astronomers.skatelescope.org/sdc2-challenge/description), and a full description of the data and the challenge is available [here](https://sdc2.astronomers.skatelescope.org/sdc2-challenge/description).

Participating teams are invited to access the full-size data cube on dedicated facilities provided by our computational resource partners. Details on each resource and how to request access are [here](https://sdc2.astronomers.skatelescope.org/sdc2-challenge/description). Each team will select their preferred computational resource within those available, and will deploy there their data analysis pipeline. A small portion of the full datacube is available for direct download to help with the initial data inspection and pipeline design.

Teams will undertake:

1. **Source finding**, defined as the location in RA (degrees), Dec (degrees) and central frequency (Hz) of the dynamical centre of each source.

2. **Source property characterisation**, defined as the recovery of the following properties:
Computational resource partners

- IRIS UK
- CSCS Switzerland
- Engage SKA Portugal
- IAA Spain
- INAF ICT Italy
- SKA France
- Shanghai proto-SRC
- Aus proto-SRC

Exploring the Universe with the world’s largest radio telescope
Science Data Challenges (SDCs)

Goal: Prepare the community for SKA advanced data products

Benefits:

- Familiarise the community with size and complexity of SKA data
- Enable the development of analysis methods
- Support the design of future SKA surveys

Data products that are prepared for the challenges will also be made available in the long term.
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**Benefits:**

- Familiarise the community with size and complexity of SKA data
- Enable the development of analysis methods
- Support the design of future SKA surveys
- Familiarise the community with data access models
- Test SKA Regional Centre prototyping
- Encourage best practices for Open Science and reproducibility
SDC2 website visitors
General access to SWG-specific talks/meeting

- Many excellent initiatives on-going in SWGs for regular virtual events
- Interest has been expressed for cross-SWG awareness and some limited access to other SWG events
- Request for info/links for upcoming series that we would share
  - Would some/many other participants be welcome?
  - Distribution only amongst SWG Chairs or more broadly?
AOB

• ???
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