SWG Chairs Telecon 17-Sept-2019
Notes by Anna Bonaldi

Participants: Antonia Rowlinson (for Jason Hessels), Izaskun Jimenez-Sera, Cormac Reynolds, Richard Battye, Phil Edwards, Lourdes Verdes-Montenegro, Gianni Bernardi, Sarah Blyth, Alvise Raccanelli, Stijn Buitink, Natasha Hurley-Walker, Eduard Kontar, Willem van Straten

Apologies: Ann Mao, Gorge Heald, Francoise Combes, Jason Hessels, Mark Sargent, Garrelt Mellema

SKAO participants: Anna Bonaldi, Robert Braun, Philippa Hartley, Tyler Bourke, Rosie Bolton, Evan Keane

Robert: first on the agenda is an **update on the high frequency science case**.
Jeff: the science case considers v>15 GHz, 75+ SWG members are contributing to it. The deadline to complete it was end of September, but it looks like some groups would welcome an extension.
Izaskun: Can the deadline be moved to Mid-Oct?
Jeff: Yes, something along those lines will be communicated.

Robert: **Science data challenge 2 (SDC2)**: between the options given to SWGs, the HI emission/absorption challenge has come on top. We are in the initial design phase for such a challenge. For survey specs, for Mid we can use as a starting point that of the generic survey: 2000h, 20 square degrees, which would contain about 10^5 HI galaxy detections. For Low we are thinking about HI absorption, survey specs TBD. We welcome suggestions on survey specs as well as details for the science analysis use cases.
The dataset will provide HI as well as continuum and introduce errors such as residual RFI and continuum subtraction. For the simulation we will use T-RECS as a basis and develop a new HI module, to populate DM haloes with HI as well as radio continuum emission in a consistent way. For emission signatures we will use ALFALFA as an atlas of spectra for the unresolved objects, and HALOGAS/THINGS for cubes. Finding a large sample of suitable data cubes for a representative atlas is not very easy, please let us know if there are some more data available that we can use.

Gianni: for an observation with Low, a very good spectral resolution (kHz) is needed to access the 21 cm forest. This would mean a huge dataset. Two more manageable possibilities are either to look at the overall absorption (tau) on a full cube, or to provide postage-stamps of particular objects selected for observation.
Robert: we were thinking of providing for Low postage-stamp cubes around suitably bright objects.
Gianni: myself and Benedetta Ciardi will get in touch with you offline to help to define this.

Sarah: what about Mid? will this simulation be a full cube or selected postage stamps?
Robert: we were thinking of a full cube in this case, but split into separate frequency ranges to be more manageable.

Sarah: we can help you with defining these specs.

Lourdes: It would be good for the challenge to address the measurement of the Hi mass function. Another interesting aspect is the separation of tidal features from the emission. Our group can provide some data for this aspect.

Robert: **Meerkat news**: Nature paper on the "Bubbles" from the Galactic centre. **ASKAP news:** ASKAP continuum survey kickoff.

Robert: **two upcoming meetings**: VLBI workshop in October at the SKA HQ; and the SKA engineering meeting in Shanghai in November. Let us know of meetings that are relevant and you would like advertised.

SWG updates from the chairs:

Cosmology (Richard): the Cosmology SWG will have a meeting, likely in January in Paris.

CoL (Izaskun): Col+our galaxy to meet for discussing synergies and surveys. Could be during VLBI workshop. Our SWG is helping with the high-freq science case. This paper presents some VLA work https://ui.adsabs.harvard.edu/abs/2019arXiv190903515C/abstract

HI (Lourdes+ Sarah): two meetings on HI galaxy simulation and HI galaxy surveys. Next FISC meeting in Cagliari.
Lourdes: I am happy to step down as SWG chair as two years passed.
Sarah: I will continue as co-chair. I attended the meeting on HI galaxy survey in Munich and it was very good. Early pathfinder/precursor results are coming in.

EoR (Gianni): upcoming meeting in January in Indore (India) together with cosmology/21cm school. Some of us are working on the Low bridging phase on assessment calibration and analysis for the prototype SKA station. Several of us are also working with precursor data, especially MWA and LOFAR. Still two orders of magnitude away from the expected signal but working to close the gap. Work also ongoing on the follow-up of the EDGES result.

Gravitational Waves (Alvise): we are a newly created SWG, co-led by myself and Samaya Nissanke. we are working on a white paper to define our science cases, which revolve around synergies between SKA and GW observatories such as LIGO and LISA. Drop us an email if you wish to collaborate.

VLBI (Cormac): Our workshop in Manchester has been mentioned already, the registration is still open.

CSIRO SKA update (Phi)l: on the ASKAP news, I would like to also mention the serendipitous discovery of highly-polarised pulsar. We will have the next annual OzSKA meeting in November (https://www.atnf.csiro.au/research/OzSKA2019.html)

Pulsars (Willem): working with precursors, especially the Meerkat project MeerTime. we will have a meeting at the end of Sept in Manchester on Meertime related work. Our group has appointed a data management rep for the SRC work.

Continuum (Natasha): Our group also appointed the SRC rep

Solar (Eduard): We had a very well-attended meeting in July in Portugal, on existing data and precursors (MWA, LOFAR). Notes available for anyone interested.