

SWG Chairs Telecon 21-Sept-2021

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Apologies: Laura Wolz, Françoise Combes, Sébastien Mueller

SKAO: Robert Braun, Anna Bonaldi (Notes), Tyler Bourke, Philippa Hartley, Jeff Wagg

Proposal allocation modelling:

Competing requirements of fulfilling share of the project from SKAO member countries and maximising scientific merit. This is a first pass at this topic, with some simulations. Both telescope time and computational processing are required, and they both need to be taken into account when scheduling allocations and tracking facility access. Commensality is also a factor, as it makes an experiment "cheaper" by sharing resources with other projects.

How do we measure access? we considered three models:

1. PI only;
2. only PI and management team;
3. PI, MT and co-Is with weights proportional to the rarity of the roles.

Jason: About commensality, a number of groups might ask for the same data product, but have very different science goals; how would each proposal be weighted with regard to their share of facility access?

Robert: This is an interesting question, and we will try to develop a prescription for defining access share that is as fair as possible.

Jason: A cost-benefit analysis of adding "nice to have" data products on top of the high priority data products might be a way to handle commensality during the scientific assessment.

Robert: The assessment of scientific merit and the accounting for facility access are treated independently of each other at different stages of the scheduling process, this would make the analysis that you suggest difficult to implement.

Andrei: For the EoR, the SWG is planning to submit a single KSP proposal with a highly distributed leadership (essentially a MT without a PI).

Robert: Some flexibility on the definition of KSP proposal leadership may be needed to handle this case as well as the more typical leadership model.

Robert: Once scientific merit is evaluated, some adjustment might be needed to fulfil the "member share" requirement. There is likely to be only a relatively small amount of Open Time. For the modelling, we have made some assumptions. We used the distribution of SWG members and their country of affiliation as parent distributions from which proposal topics and team membership were drawn at random; we used a log-normal distribution centred on a few tenths of hours and 1000h for PIs and KSPs observation durations respectively. Are these duration distributions plausible?

Andrei: A single very large KSP project of $\gg 1000h$, perhaps as much as 15000h, would likely be requested for EoR.

Jason: For transients, we hope to piggy-back on most observations, plus small proposals for TOOs or follow-ups.

Mark: continuum HPSOs would be on the high-end tail of the log-normal distribution. I suspect this applies to several "legacy" projects.

Robert: Yes, projects over $\gg 1000$ hours would of necessity be scheduled over several calendar years. They would very likely be highly commensal.

Mark: In the letter of intent stage for KSPs, can this kind of commensal planning be made?

Robert: Yes, this is what we would like to see, both from the perspective of promoting collaboration as well as maximising commensal benefits. We could also do something less formal earlier in this vein. If there is sufficient interest, we could restart discussion on commensal survey strategies. Please let me know if that interest is there.

Robert: first indications from the modelling:

- using all roles in KSP accounting (option 3 above) is viable and preferred
- it is possible to meet the constraints jointly, but easier to balance smaller proposals than big KSPs.
- KSPs and PIs allocations could be used jointly, so that PI proposals could balance any imbalance for KSP.

Science data Challenge 2:

Concluded on 31st July. 8 HPCs made resources available for the teams to complete the analysis. This was beneficial to us but also to them in

gaining experience on interfacing with a diverse community. 12 out of 40 teams made final submissions; other teams undertook significant analysis. The final range of scores between the teams is quite large, because the score considers detection and false positives, which is a difficult balance.

Leaderboard live on sdc2.astronomers.skatelescope.org. Congratulations to everyone that took part. Formal announcement mid-October, to coordinate with institutes.

We are still collecting the full submission packages for reproducibility award assessment. A paper is being written on methods and results. We will encourage collaborations between teams to foster future development. We will also assess how effective the HPC engagement was, and how to improve this aspect for the future. Finally, we want to look at the number teams that didn't follow through, and how to improve this aspect in the future. Future challenges: several directions pursued.

Any other business:

Josep Miguel: CoL webinar taking place on the 24th September

Jason: Relevant to this

group: <https://www.astron.nl/events/lofar2programmes/>

Upcoming conference: <https://salfconference.org/salfviii/>

Stefano: Italian SKA meeting online, we also had the Cosmology SWG meeting in Italy, in person, and it went very well.

Upcoming SKA meeting in Italy: <https://indico.ict.inaf.it/event/1512/>