17 May 2012



**Notice of one-day ‘short course’ aligned with ICEAA/IEEE meeting**

**“PAF developments towards SKA”**

**Friday 7 September 2012**

**Venue; to be confirmed, Cape Town, SA**

*Motivation for this extra day’s discussion is to take advantage of key PAF developers and users being present at ICEAA, and to couple it to a discussion on the factors which limit dynamic range in synthesis arrays, particularly when PAFs are adopted.*

***Objectives of the day***

*Review the potential of dish-arrays with PAFs as front-line astronomical instruments, particularly multi-band PAFs that provide ultra-wide FOV performance over the full frequency range of a dish antenna.*

*Consider key calibration issues that influence the ultimate image dynamic range of synthesis arrays.*

*Capture PAF developments by international parties who are not formal members of SKA PEP phase consortia*

*Establish or perhaps even review (depending on SKA PEP Stage 1 progress) the PAF development plan relative to SKA down-select dates (TRL for SRR, CDR etc)*

*Discuss PAF developments (observatory-based) and provide time for discussions which might not have been covered in the other ICEAA Special sessions.*

**Outline programme**

**0900 – 0910 – Welcome, introductions**

**Session 1: New instruments proposed or under construction; science drivers and emerging (supporting) technologies**

0910 – 0940 SKA baseline

SKA1: Three partially overlapping octave bands to cover 0.45 – 3.0 GHz (Robert Braun)

0940 – 1000 ASKAP update (focus on PAF design & validation) (Stuart Hay)

1000 – 1020 APERTIF (speaker tbc)

1020 – 1045 Coffee

1050 – 1110 Canada AFAD – digital receivers (speaker tbc)

1110 – 1130 –USA contribution(s) (speaker tbc)

**Session 2: Dynamic range limitations of synthesis arrays**

1130 – 1200 Review of Limitations and Mitigation strategies (Robert Braun)

1200 – 1230 APERTIF experience (speaker tbc)

1230 – 1330 - Lunch

**Session 3: The phased array feed/LNA design – current status & future extensibility**

1330 – 1430 Discussion Session 1

Antenna analysis requirements for SKA (Marianna Ivashina)

1430 – 1500 Tea

1500 – 1600 Discussion session 2

*SKA PAF developments during pre-construction phase; PAF – design, optimisation, possible trade-offs and development of the front end – including the LNA (feed optimisation) challenge*

1600 Review & Close

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*Next meeting/discussions – CSIRO has tentative plans for a full-scale PAF/new receiver technologies workshop sometime early -2013.*