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Beam quality and stability of PAF systems

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Phased array feed (PAF) systems provide a much larger field-of-view than single pixel feeds thereby considerably improving the survey speeds achievable with reflector dishes.

PAF systems also provide the flexibility to adaptively change the primary beams of the telescope, for example for interference suppression.

One of the main worries from a self-calibration and imaging perspective is that this flexibility reduces the quality and stability of the beam pattern.

In this presentation, I will present a framework to assess these issues.

Using EM-simulations of the APERTIF system, I show that PAF systems can achieve similar performance as classical feed systems.

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