

Cutting Carbon in SKA Science Computing through Lifecycle Management, Load Shaping, and Accelerators

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20Tb/s

Challenges

Solutions

8Tb/s

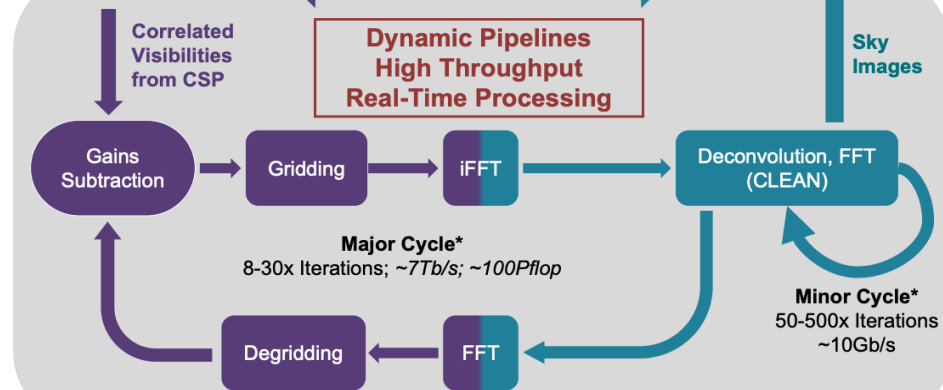
SKA Big Data Processing

~135PFlops 700PB/yr x50yrs



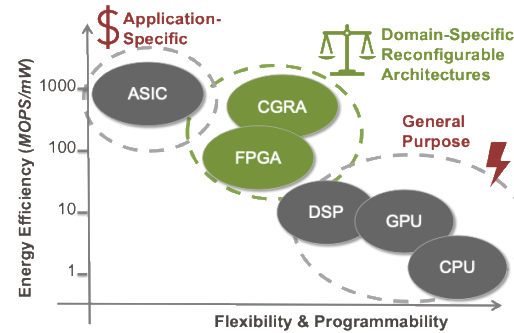
Visibility Domain | Image Domain

Dynamic Pipelines
High Throughput
Real-Time Processing



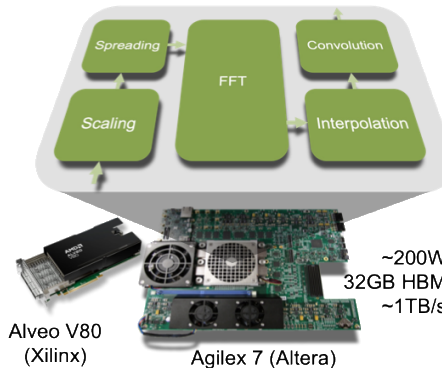
*Numbers Based on MeerKAT (Precursor of SKA-Mid, Karoo Desert)

Specialization for Energy



High-level synthesis on FPGAs

Fast development and analysis



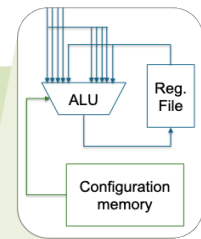
astroCAMP



CEO-DC



Working principle
Instruction-based reconfigurable cell



Coarse-Grain Reconfigurable Arrays (CGRA)

Scaling up
One tile of 2D mesh of reconfigurable cells

