NAF status

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HELMHOLTZ RESEARCH FOR GRAND CHALLENGES

DESY.

HTCondor Status

New nodes about to be purchased for Grid & NAF

- ~200 cores (with HT in Grid)
- 4 GB/Core in Grid and 8 GB/Core in NAF
- 18 Server: 12 for Grid, 6 for NAF → 1200 cores for NAF

-Jupyter Hub Upgrade:

- New version, general updates, ...
- Wednesday evening / Thursday morning

DUST status

- Storage blocks: minor issues without user impact, all work finished in maintenance window
- Ganesha upgrade: `git clone` broken, reverted to previous release
  - contacted vendor: known issue, received efix ~1 day later: Firmware upgrade bricked 2 of 6 NFS servers
  - impact: degraded redundancy and less bandwidth
  - solved after ~3.5 weeks, required multiple mainboard replacements and complaints with the vendor
- Rolling GPFS upgrade on schedulers
  - **do not fix** a scheduler in your script!
- Restripe on `/data/dust` from Tuesday to Friday morning to optimize data placement

dCache status

- rebalancing pools for ATLAS and CMS instances
- overcoming IO limitations
  - disks getting larger, IO per disk remains constant
  - newer poolnodes less IO/PB than older poolnodes
  - mid-term plan: put NAF centric data on older poolnodes
  - long-term plan: mix poolnodes of different user group to better distribute data and increase overall IO of active data

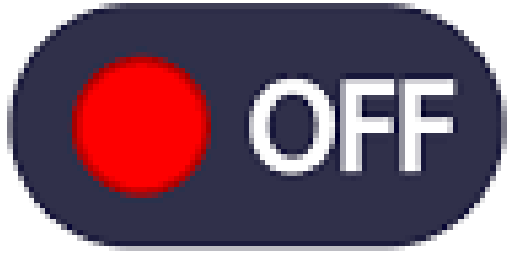
Saving Energy over Summer

Background

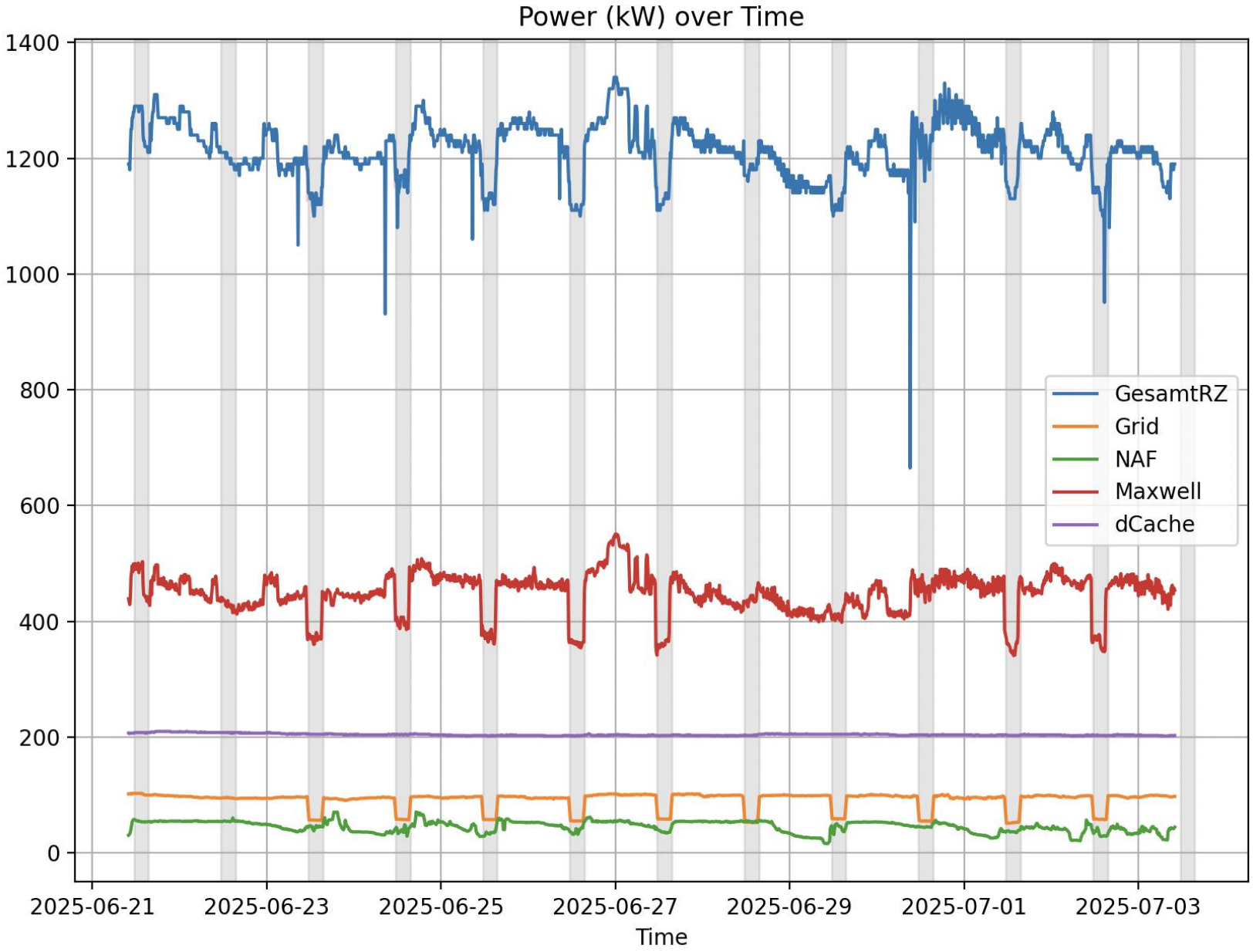
- MPC: DESY Campus HH save ~1MW from ~26.6 till end of Juli between11:00-15:30
- Reason: Reduce peaks because of cryogenics
- Asked IT, whether we can contribute with ~200 kW to these savings

Largest consumer within the computing center is the IDAF (Maxwell HPC, Grid, NAF, dCache) → focus on these infrastructures

- In general: We aim for most efficient usage, and investigate ways to modulate power consumption according to external factors
- This was a good occasion to test our tooling in real-life
  - Grid: reducing CPU frequency → all jobs continue running, albeit somewhat slower
  - NAF & Maxwell HPC: Controlled draining of worker nodes, and power down between ~11:00 and ~15:00 of ~30%, preferably the older machines
  - dCache storage: no reduction possible – but optimization done early this year



Results:



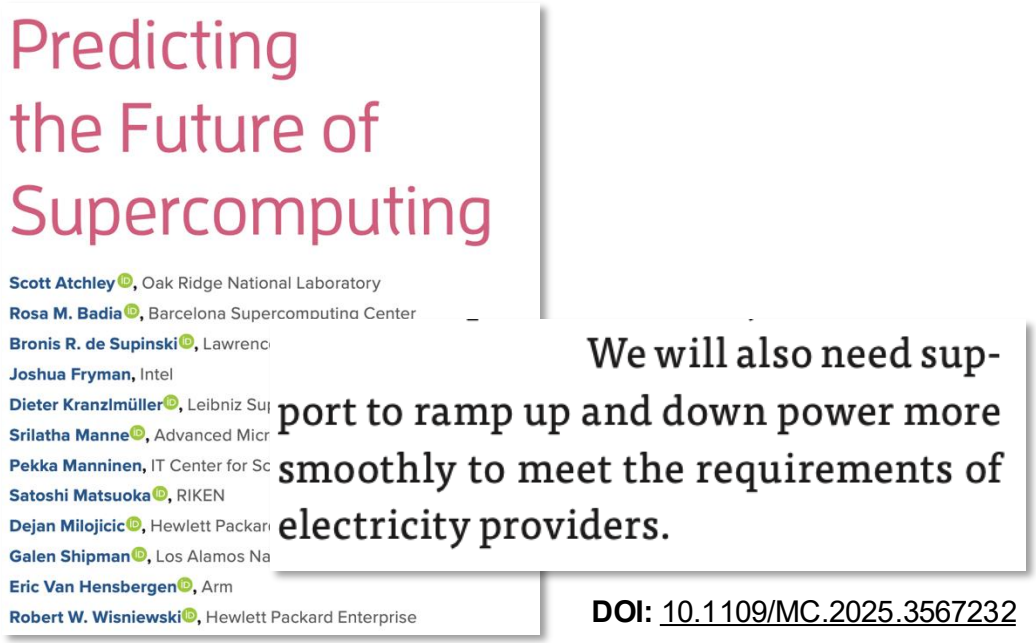
From 23.6. – 2.7.:

- Up to 110 kW less power consumption in peak
- Saved ~3.300 kWh energy

Future: Adapting power usage

How will things go on?

- MPC: Cryo does not need as much power as planned, hence no need for further modulation and savings at IT in Juy 2025
- We analyse the results: more precise savings, effects on users, effects on hardware, …
- We continue working on automates that can modulate power
  - Incl. Digital Twin of the computing center and the IDAF
- Need to involve with all partners, crate communication channels, should we need to modulate power draw because of external factors
  - E.g. more cryo needs more power
  - E.g. new regulations for grid charges for large consumers make modulation according to the price or availability of green electricity sensible



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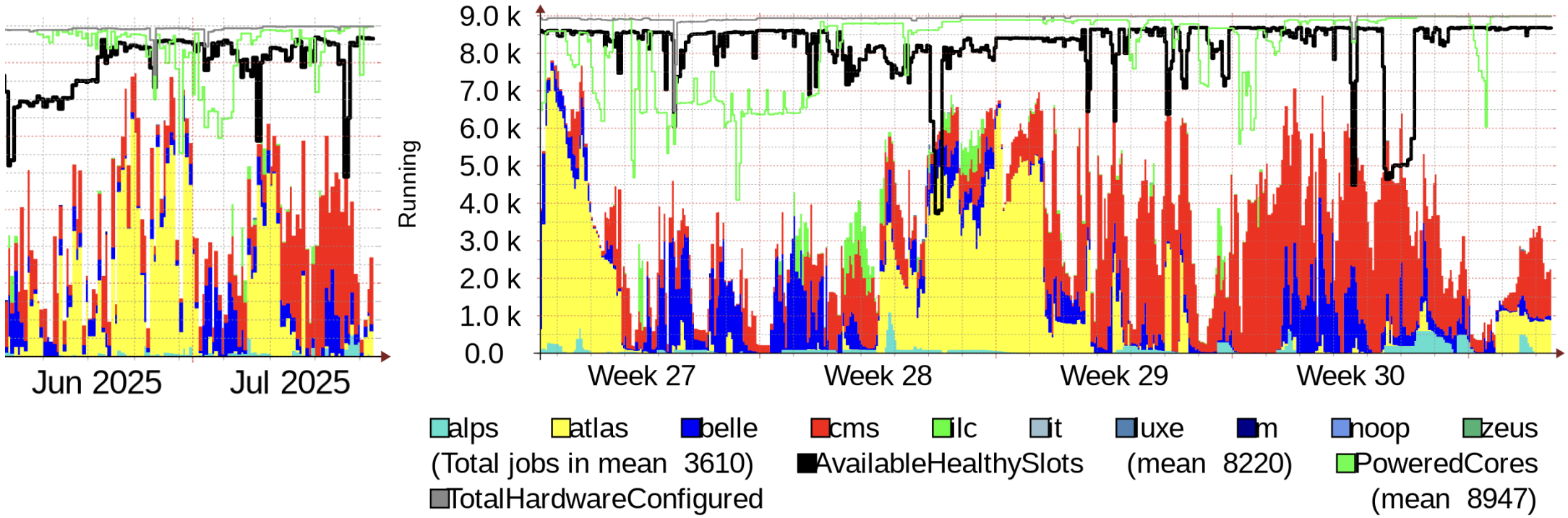
… one more NAF thing:



Anyone seen the green line?
We have implemented an power-down/power-up mechanism, that follows the load of the clusters

PRC & POF-V

- PRC is approaching:

Next (100) PRC meeting (PRC100): 11/12 November 2025 in person in Hamburg

» **Open session on Tuesday 11 November 2025**

» **Closed session on Tuesday and Wednesday, 11 and 12 November 2025**

  - Plan: First half of September: have a combined NUC-PRC-preparation meeting
  - Proposal: Tuesday 9.9. @ 13:00 – 15:00

- POF-V: ... is basically our funding. First interviews conducted to get input for IDAF strategy document