

# CAB iterations and open points

(By CGS)

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# CAB Data exchange

- CGS            I/F Data to CRISA            18/11/2002
- LMSO        Radiative surface assessment 18/11/2002
- M.Capell    CUPS close to CAB            20/11/2002
- H. Ross     USS02 CAD to CRISA        20/11/2002
- CRISA       Thermal analysis results      5/12/2002

# CAB open points

- Dissipation:
  - 50W from flight design or
  - 50-67-80W from CRISA?
- Width of the fence in the Wake Radiator, considering clearance
- TMM + GMM reduced model are needed
  - In 2 weeks after models delivery dimensioning cases will be issued

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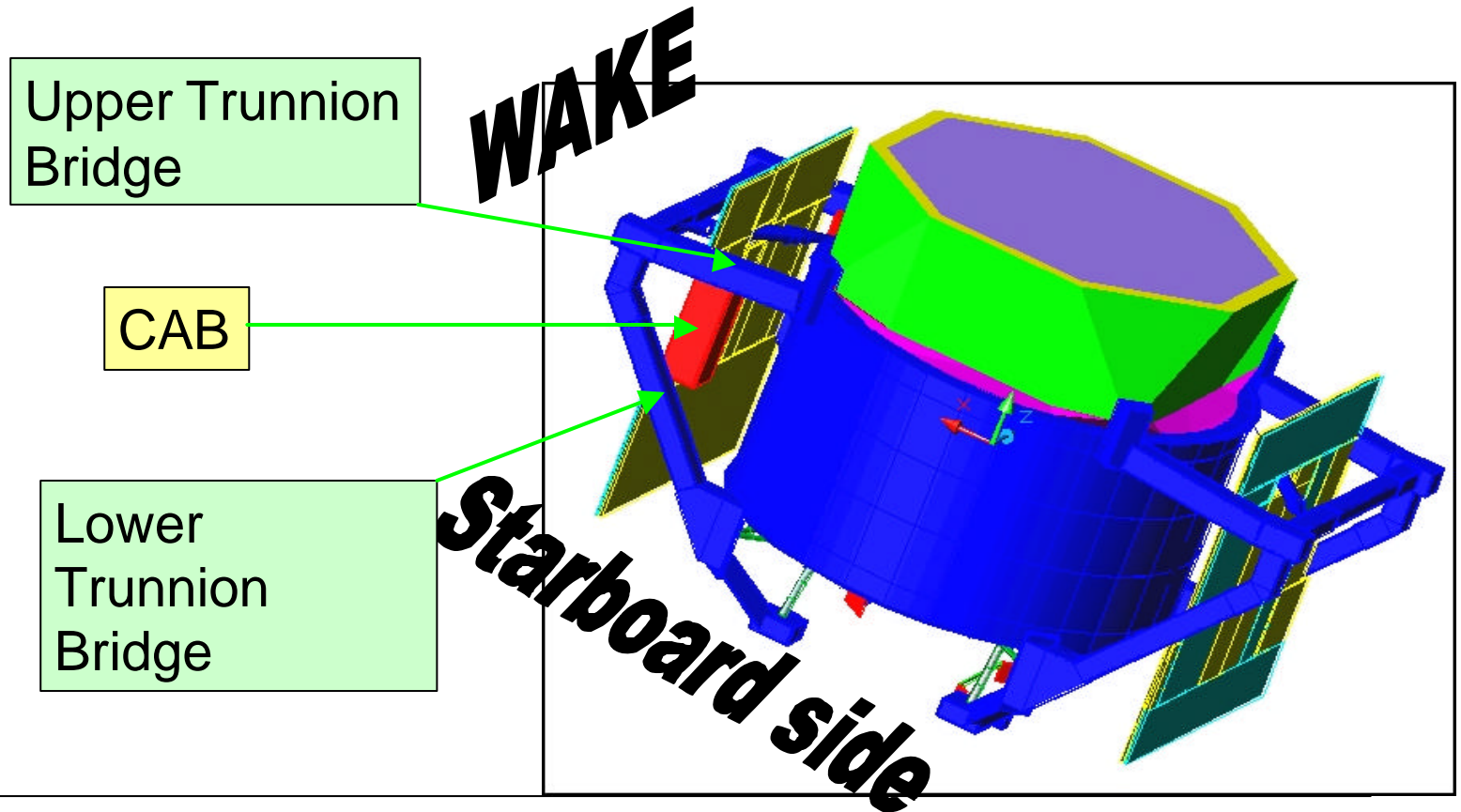
# CAB open points

- Temperature ranges?
- Power allowed to be put on the USS02 ?
- Accomodation of CAB/CUPS/Warm He
- Thermal H/W procurement

# Additional runs for CAB thermal analysis

(By CGS)

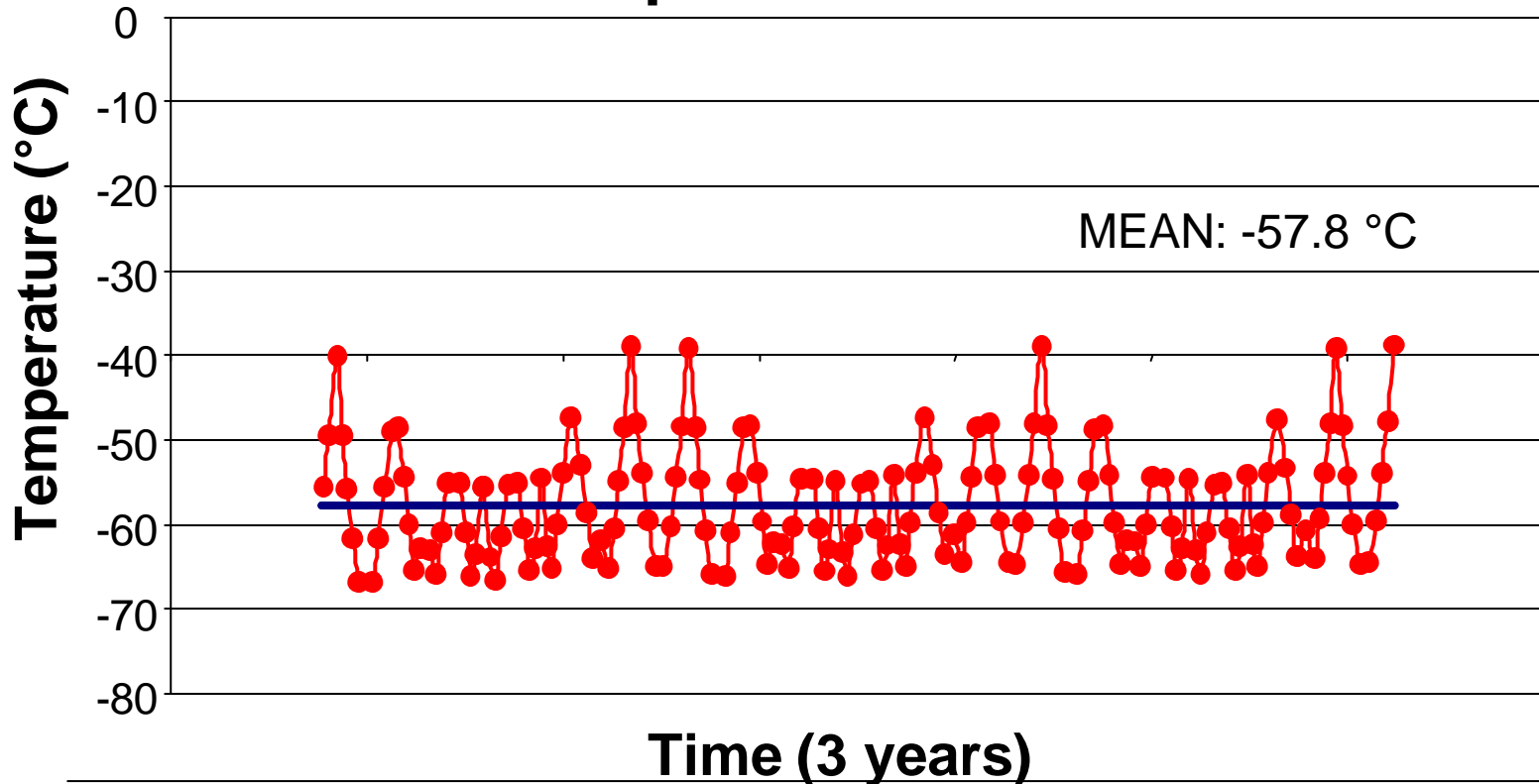
# CAB Location





# CAB radiator sink temperature

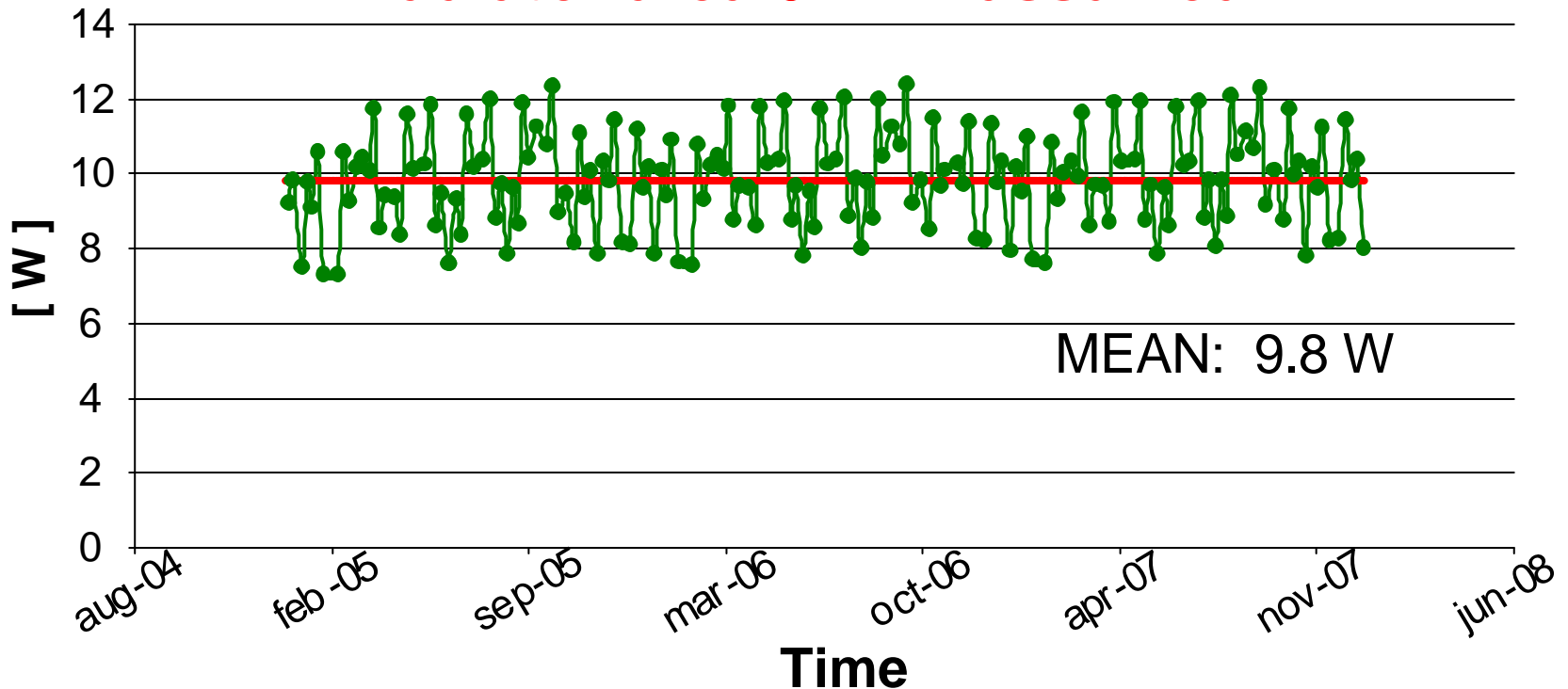
## MERAT temperature for CAB radiator



# CAB radiator orbital loads

## LOADS for CAB radiator

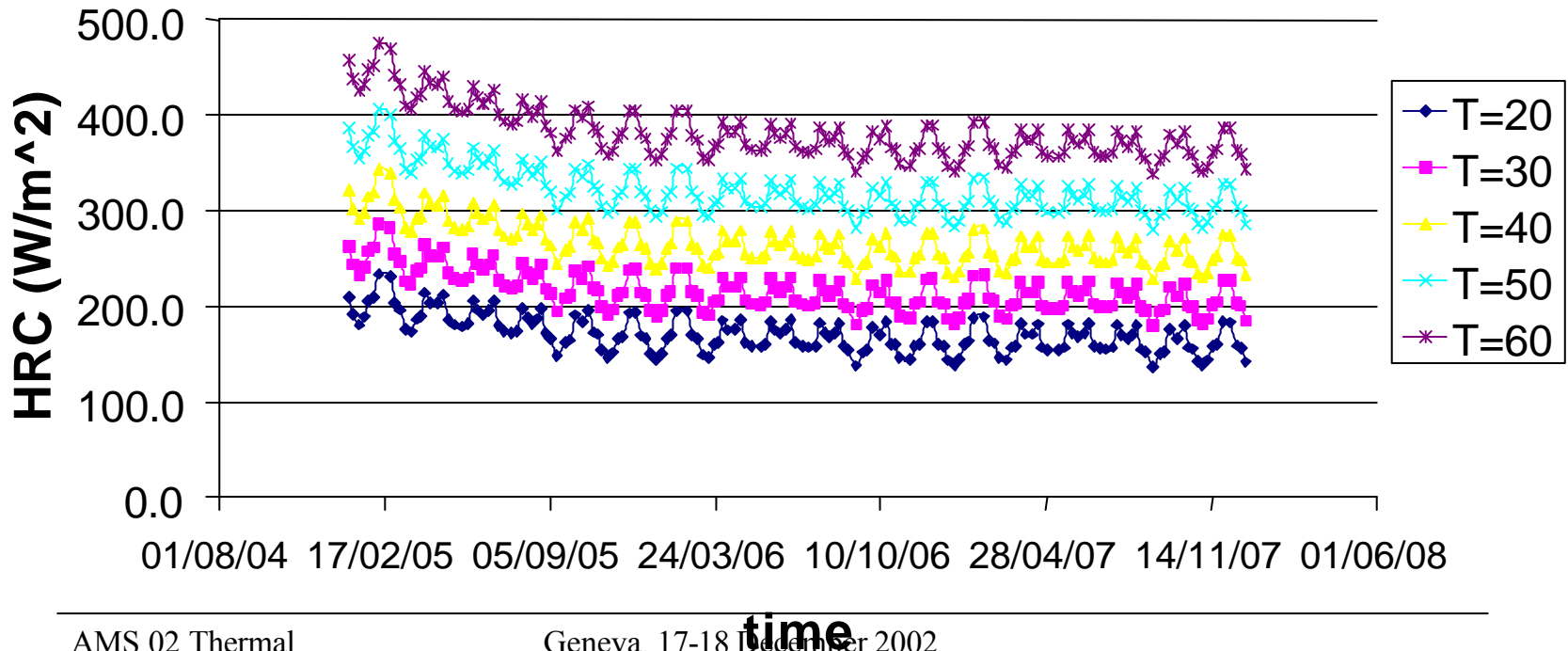
**Radiator area 0.2 m<sup>2</sup> assumed**





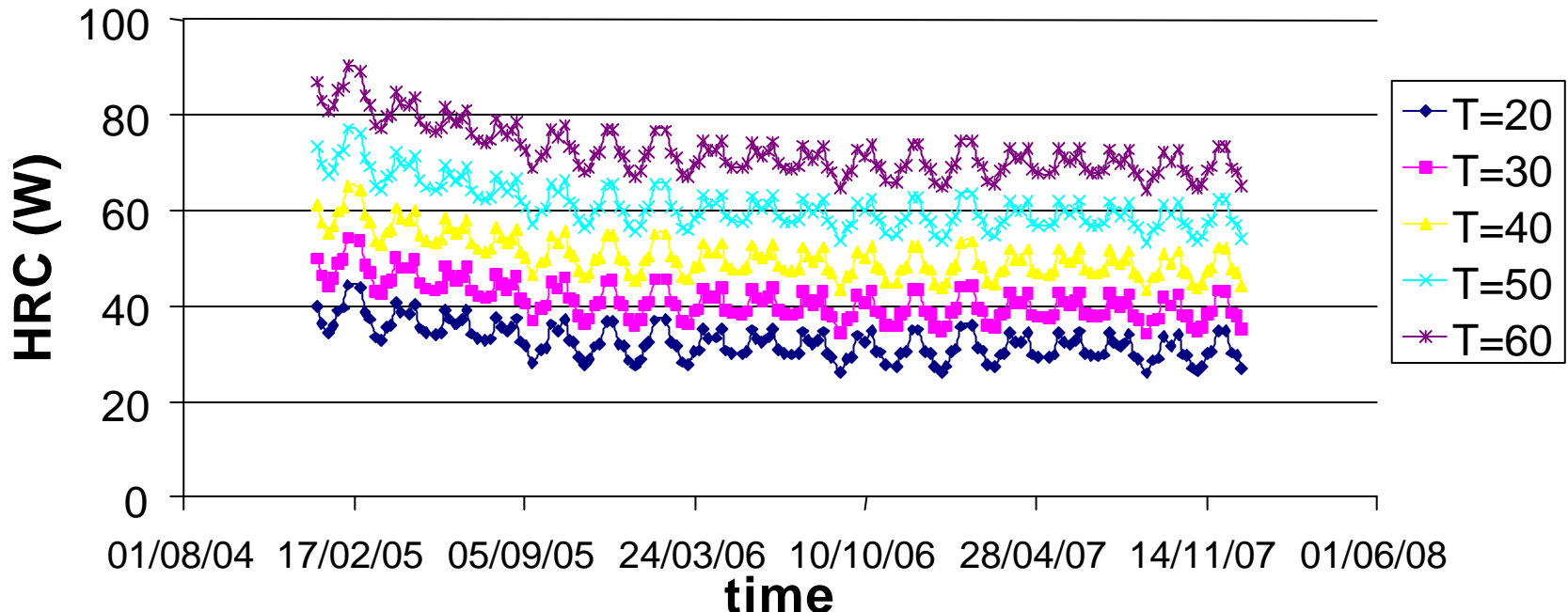
# CAB Heat rejection capability (1) (radiation only)

(per unit area, @ different temperatures)



# CAB Heat rejection capability (2) (radiation only)

Radiator area assumed 0.2 m<sup>2</sup>



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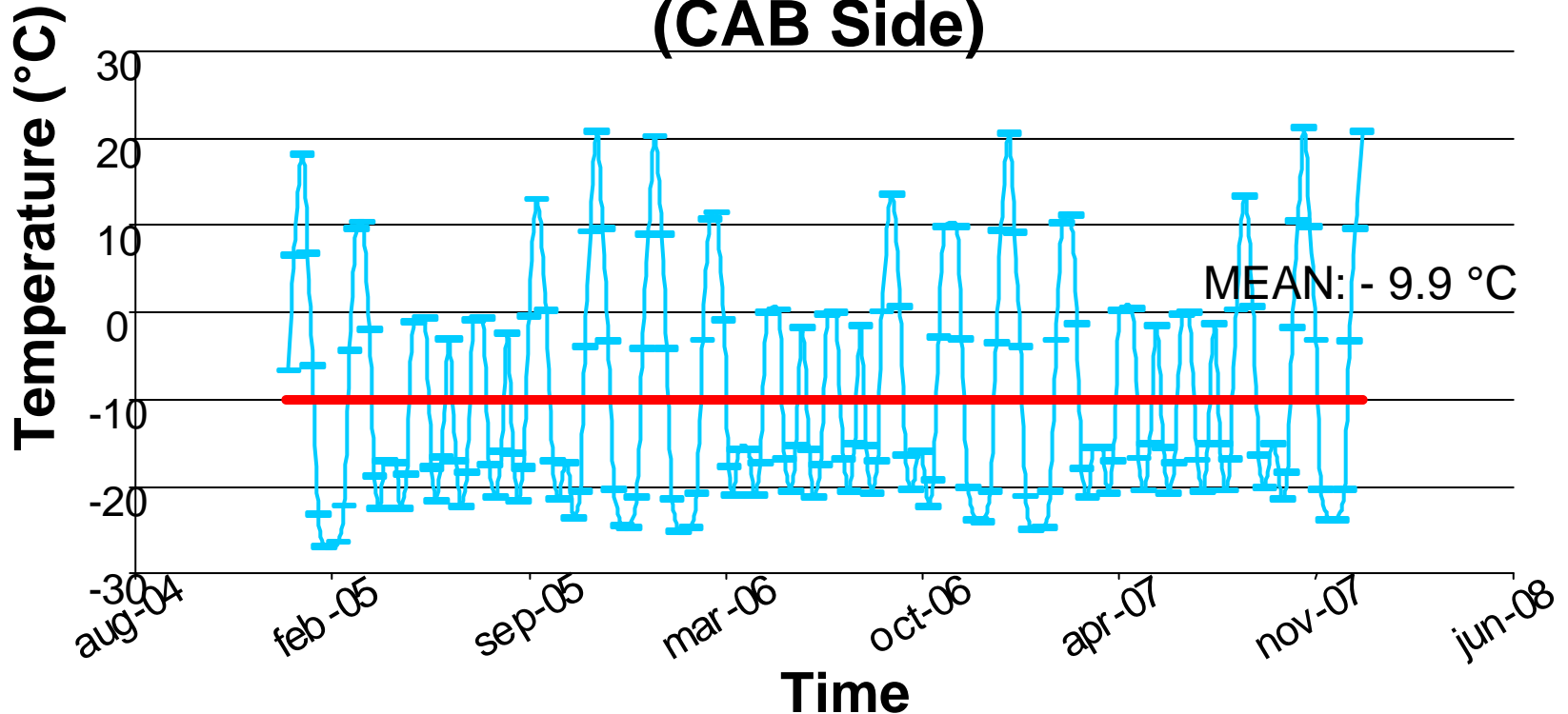
# CAB heat rejection

- Trunnion bridge contribution:
  - A conductive link of 1.0 W/K is assumed between CAB and both Upper and Lower Trunnion Bridges.
  - CAB assumed isothermal with its radiator node



# TRUNNION time history (1)

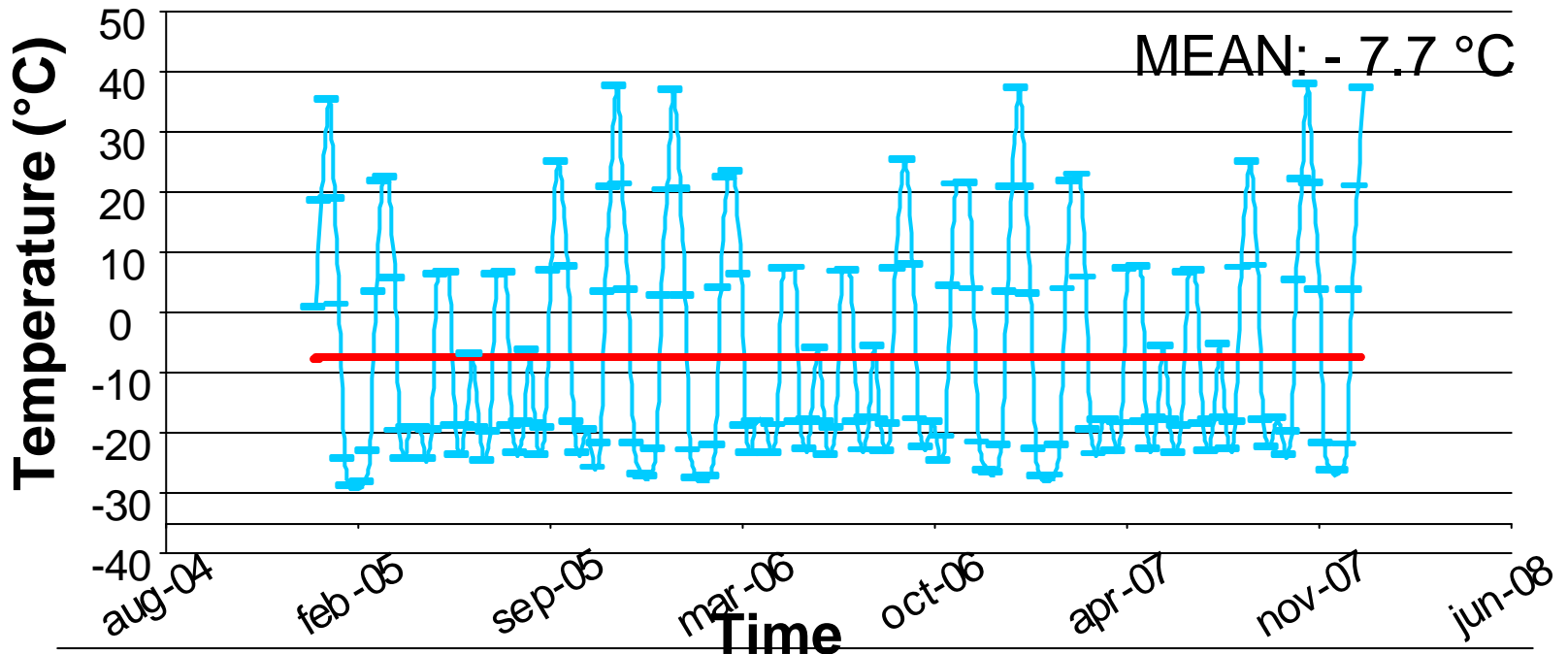
## Upper Trunnion Bridge STARBOARD (CAB Side)



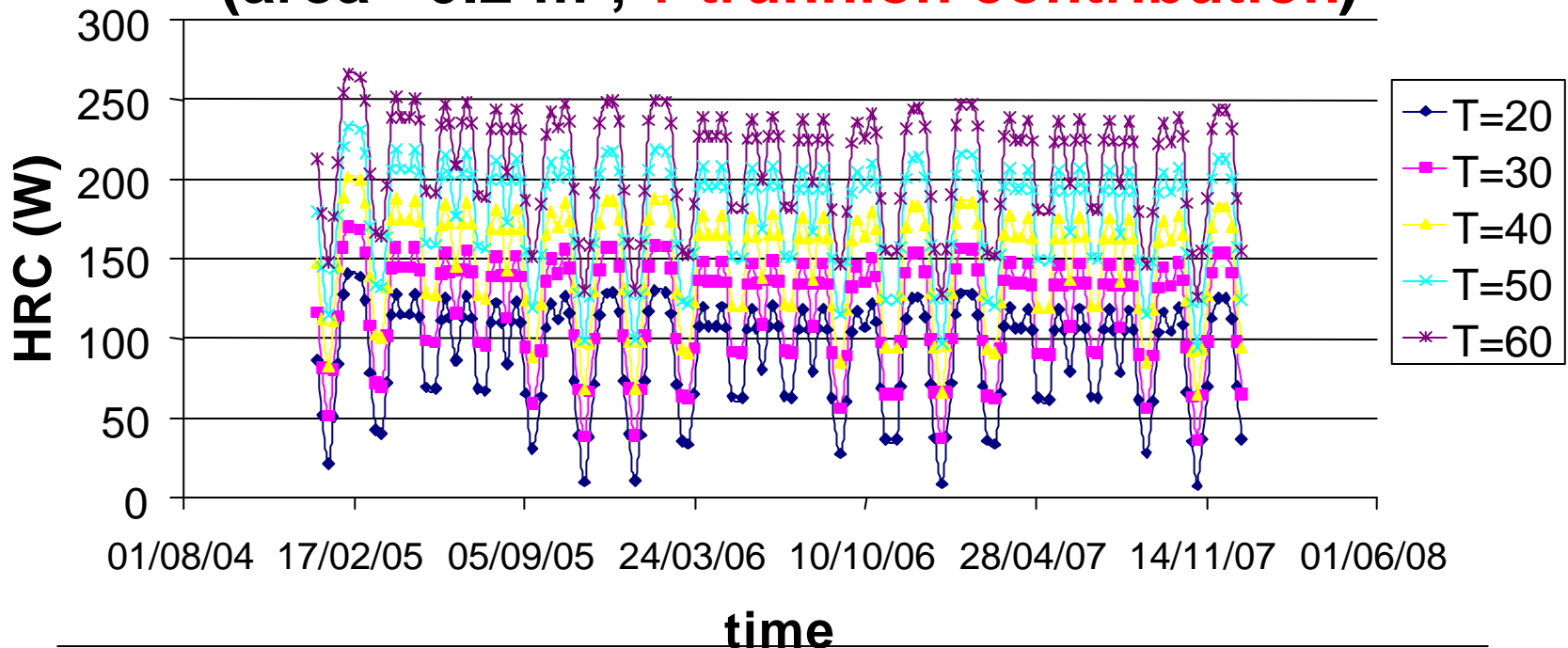


# TRUNNION time history (2)

## Lower Trunnion Bridge STARBOARD (CAB Side)



# CAB Heat rejection capability (3) (radiation + conduction) (area= 0.2 m<sup>2</sup>, + trunnion contribution)



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# CONCLUSIONS

- The “Open Points” should be clarified
  - Dissipation
  - Dimensions
  - Accomodation
  - Temperature ranges
- A thermal path through the USS is foreseen
  - Detailed studies shall be performed (transients, ramp up)