

Status of the AMS-02 TRD Mock-Up

**AMS TRD Integration Meeting
Oct. 2005, Rome**

Philip von Doetinchem
for AMS Aachen group

in cooperation with ISAtec Aachen and D. Casadei (INFN Bologna)

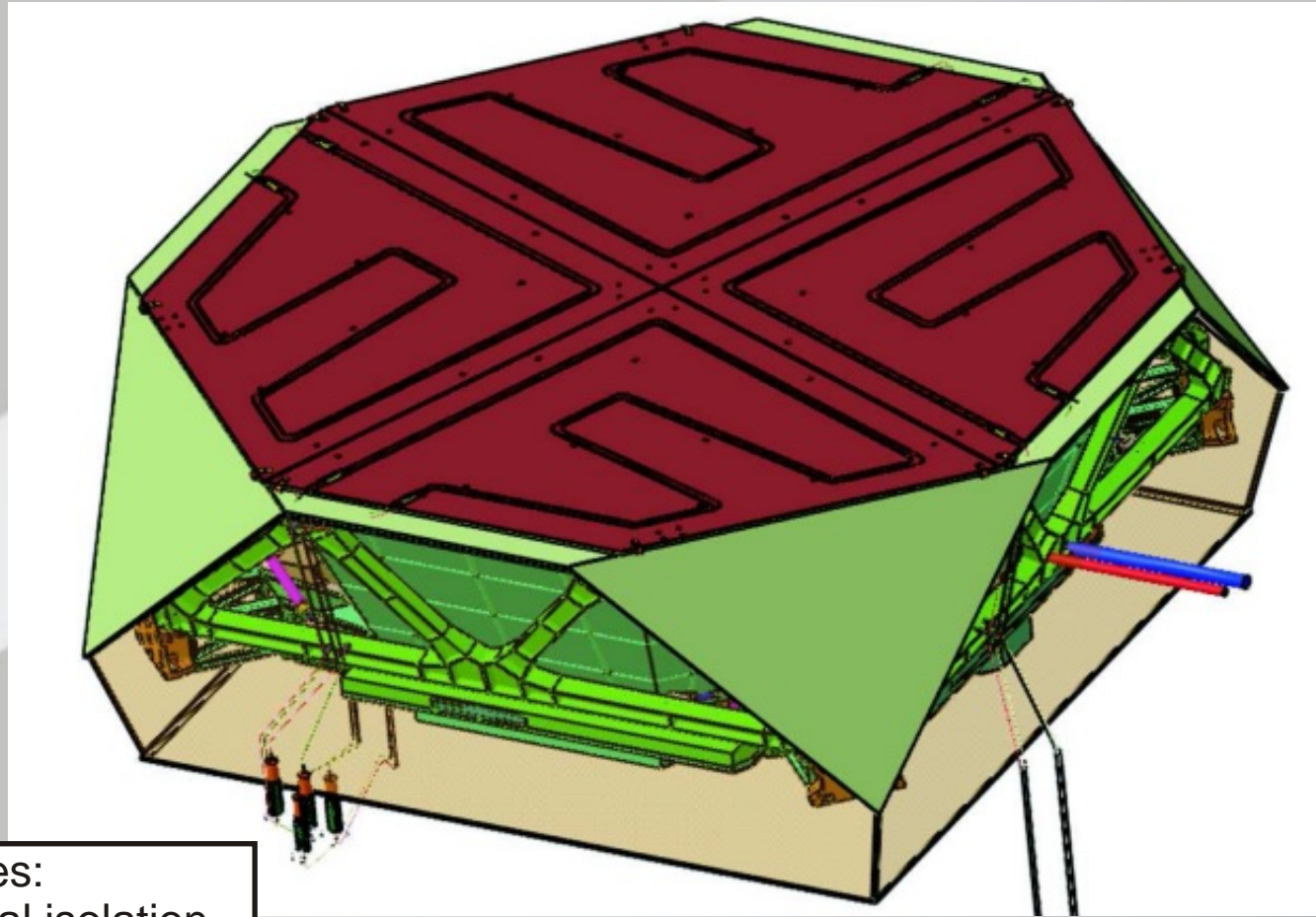
Goals

MLI wrapping design:

- definition of holes in MLI for cabling and mechanical fixtures
- study of interferences between different components

Test cabling for TRD & ToF

- definition of cable lengths
- design of cable supports to match NASA constraints



Purposes:
- thermal isolation
- electrical shielding

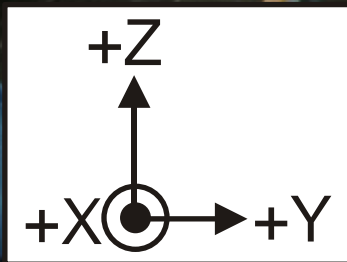
MLI (Multi Layer Insulation)

RAM

TRD

upper ToF

WAKE

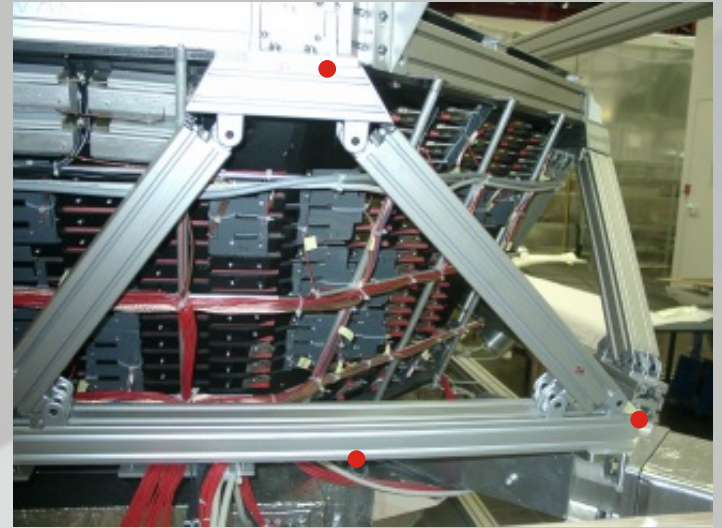
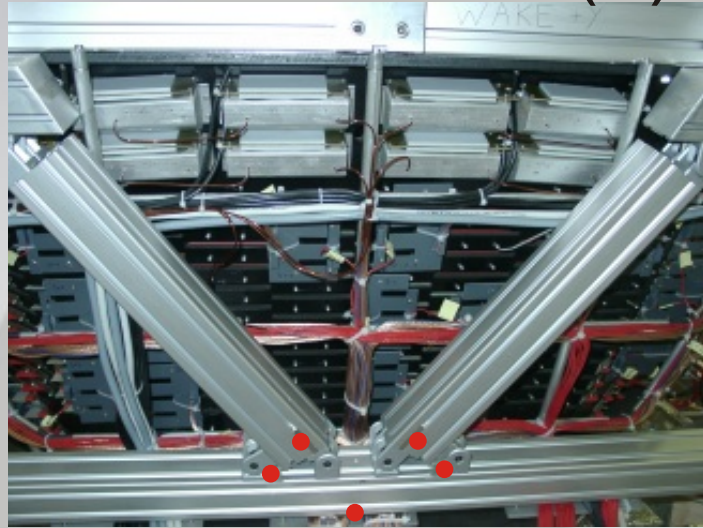
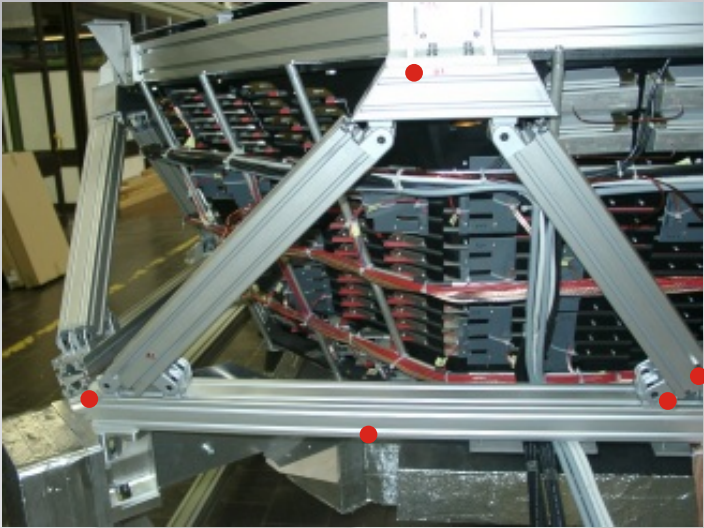




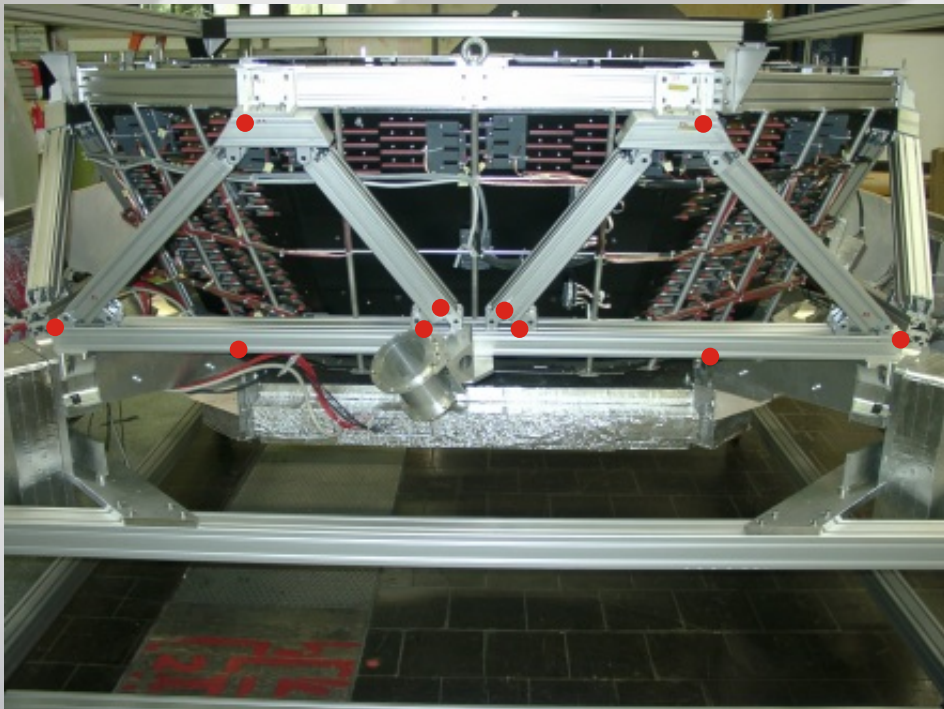
Upper Cover with spokes for
Zenith Radiator

Z-Brackets

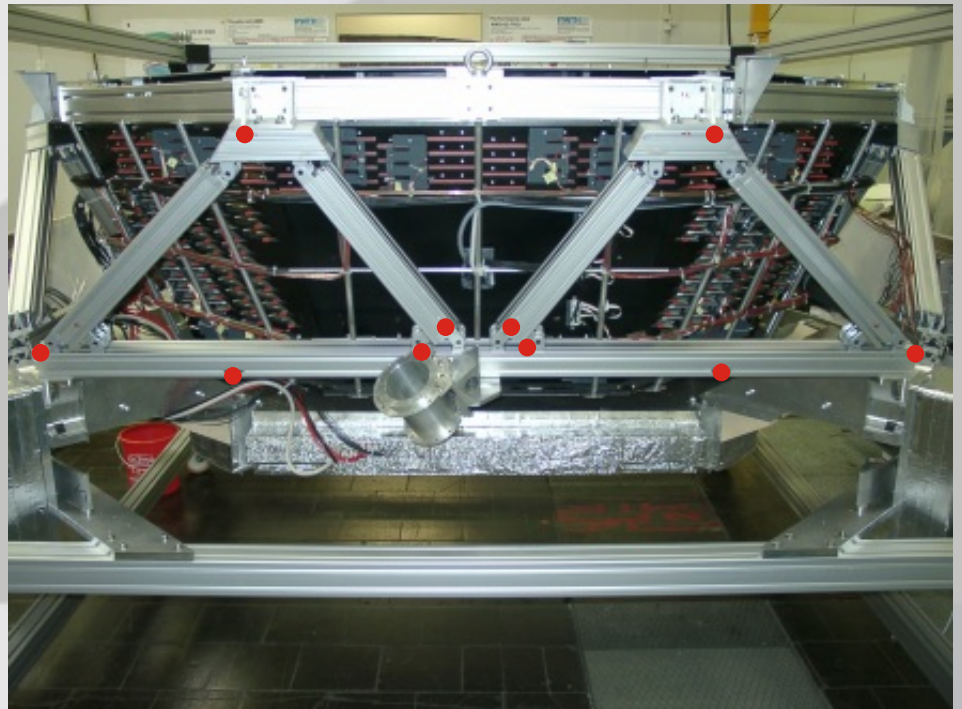
MLI fixations (●)



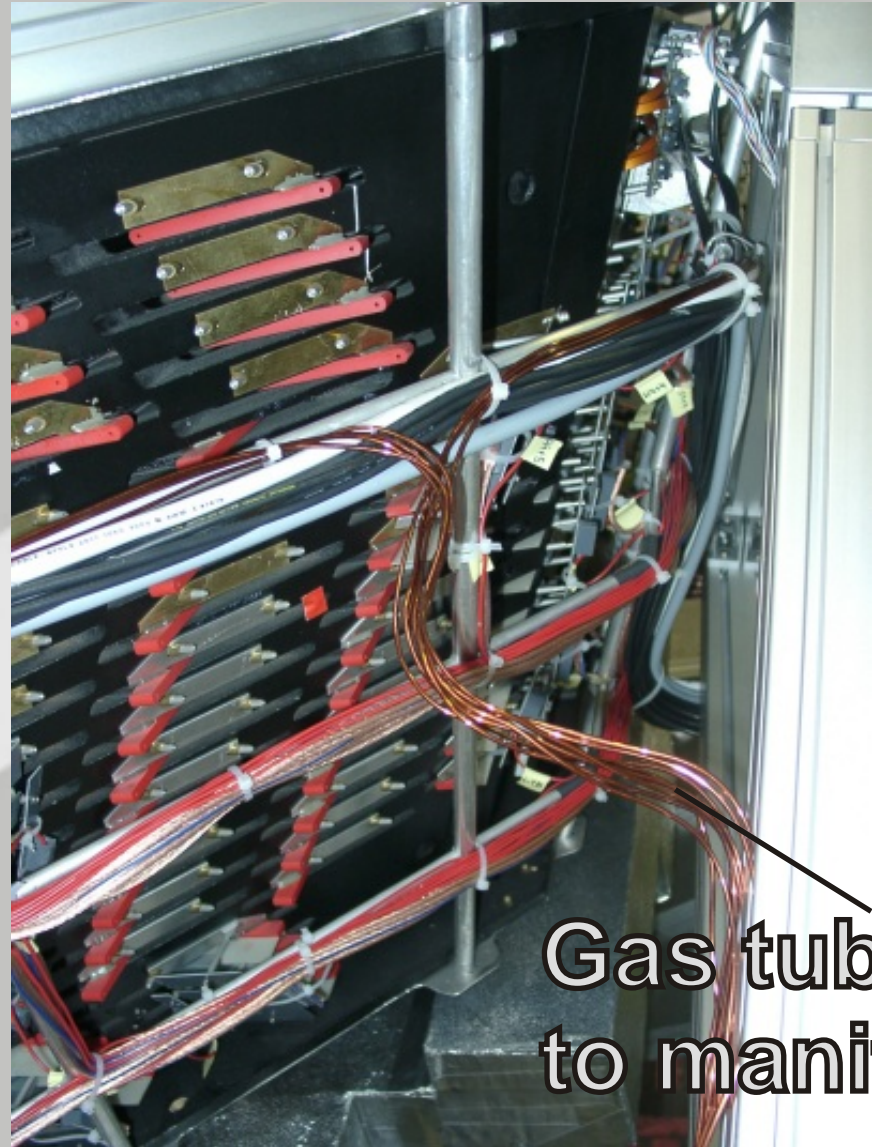
Wake +Y



Starboard

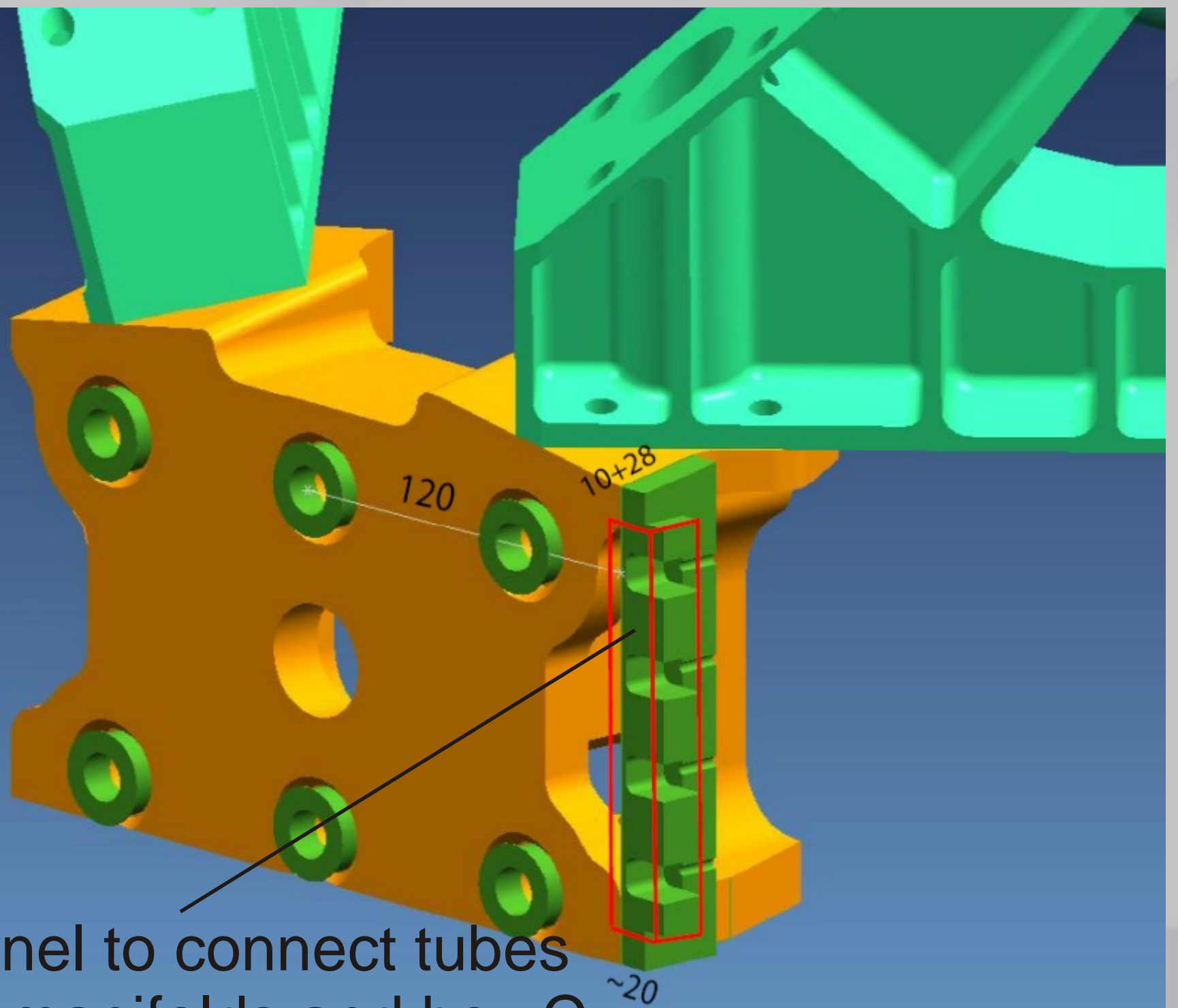


Port

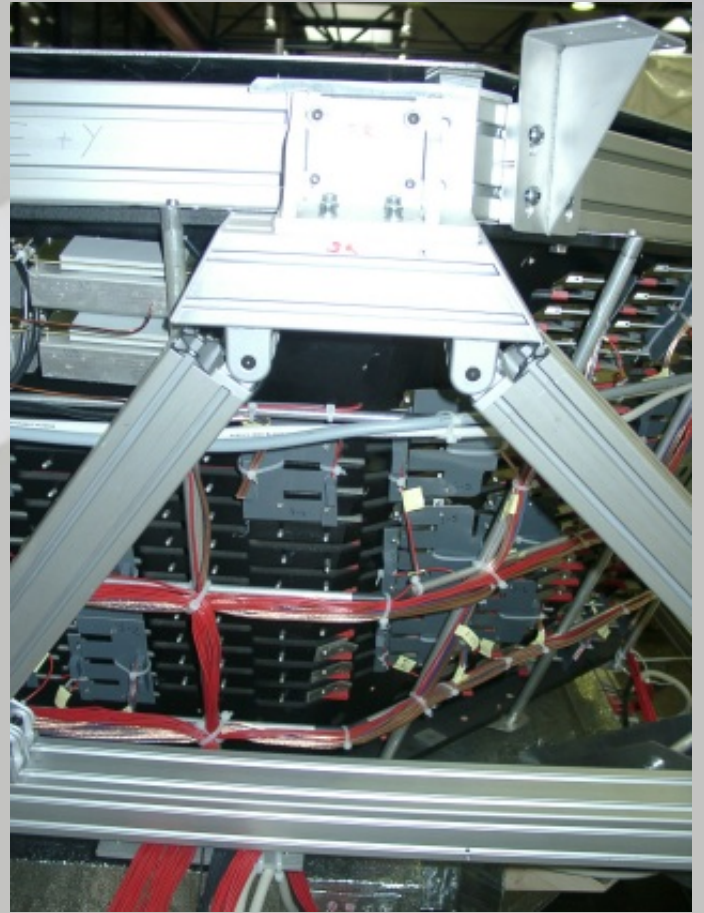
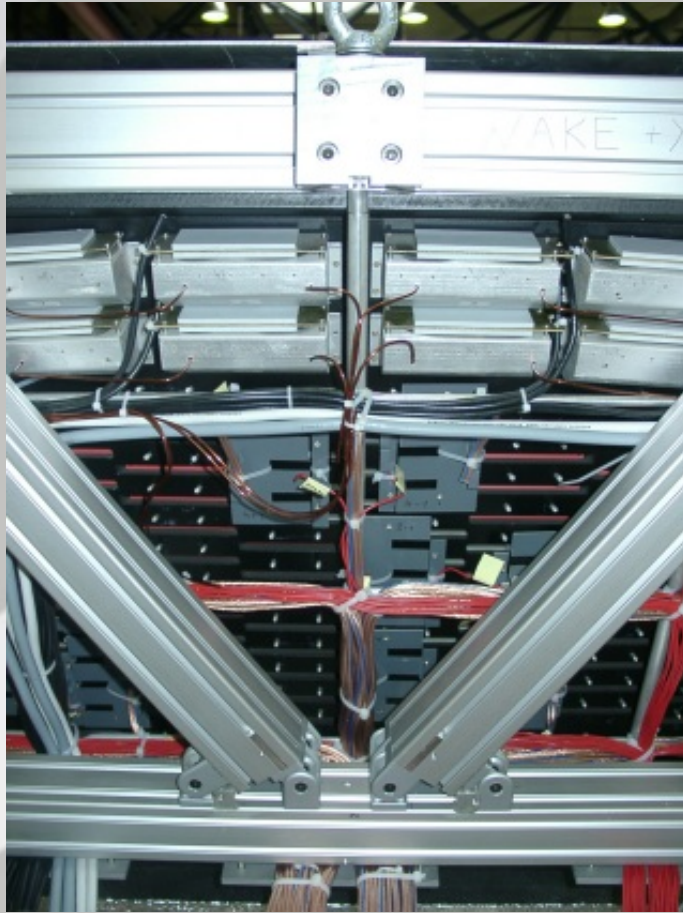


Gas tubes
to manifolds

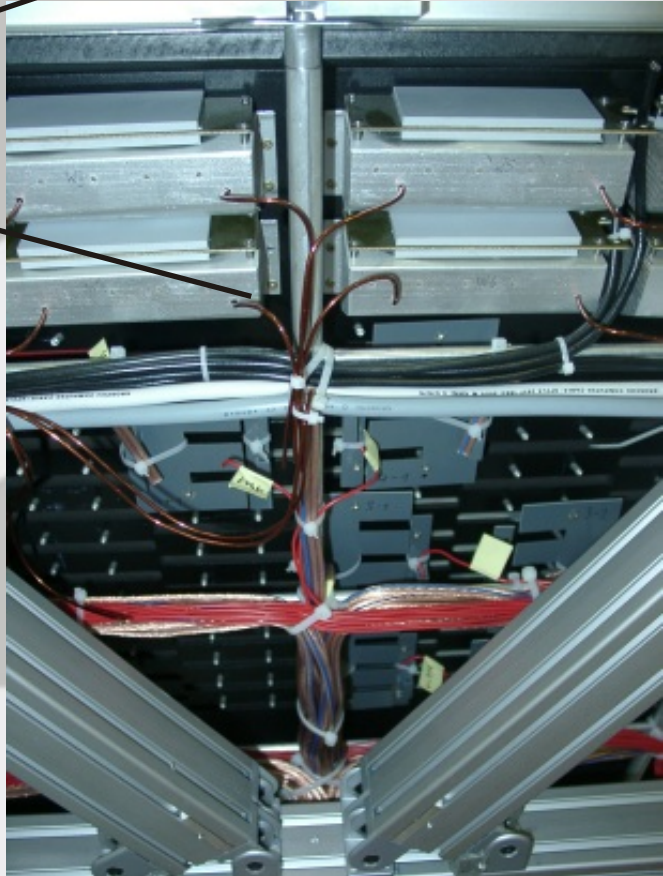
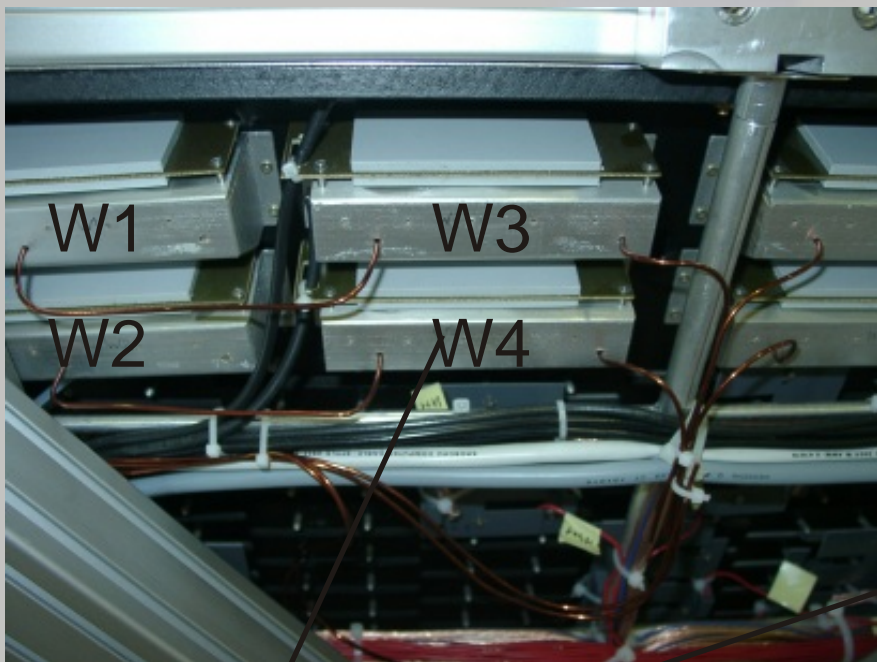
Wall 2



Patch panel to connect tubes between manifolds and box C



Wall 3 - Wake



Manifolds

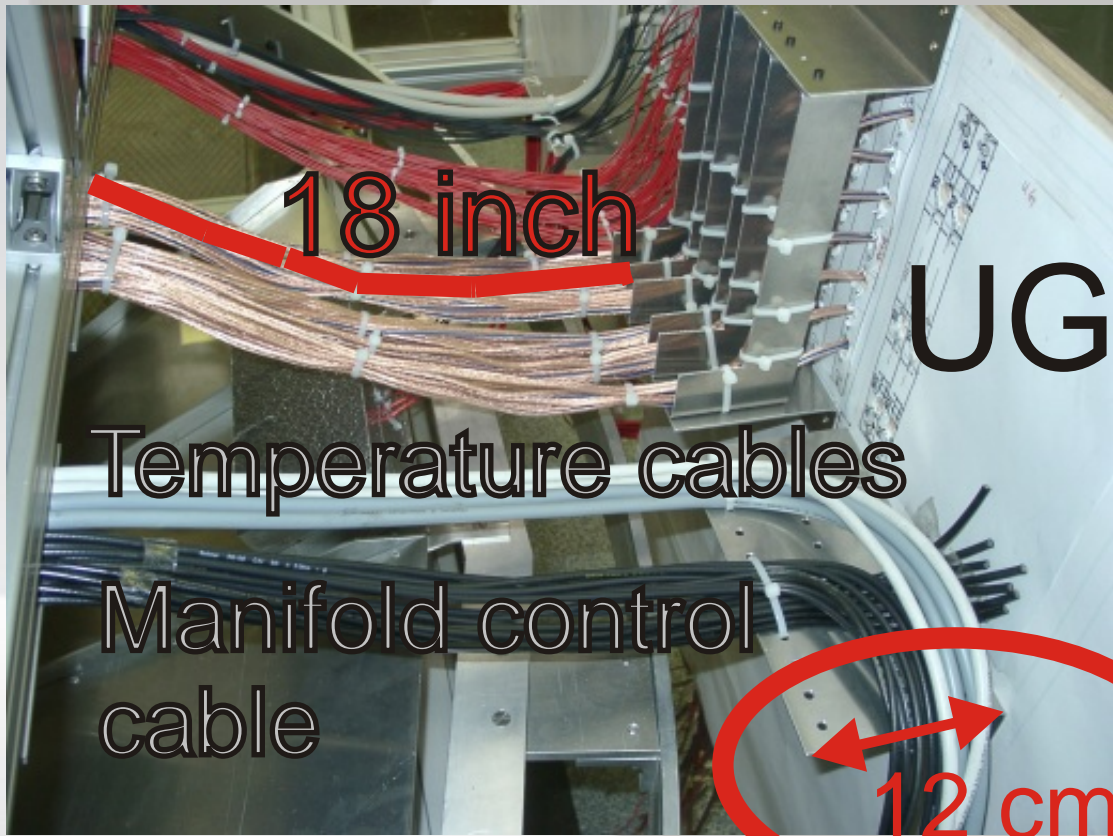
Wall 3 - Wake

Manifold control

W1	145
W2	138
W3	144
W4	141
W5	176
W6	169
W7	193
W8	183
R1	492
R2	479
R3	475
R4	471
R5	445
R6	423
R7	428
R8	424

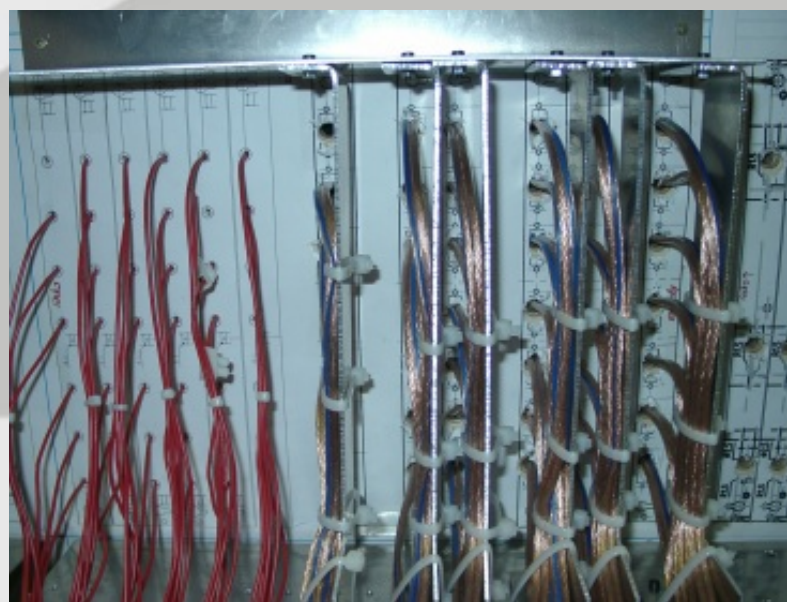
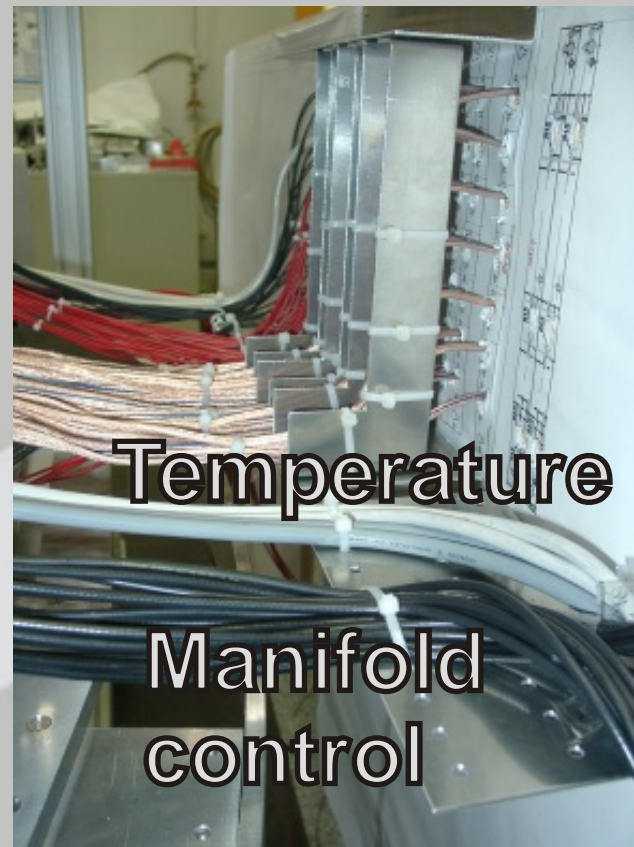
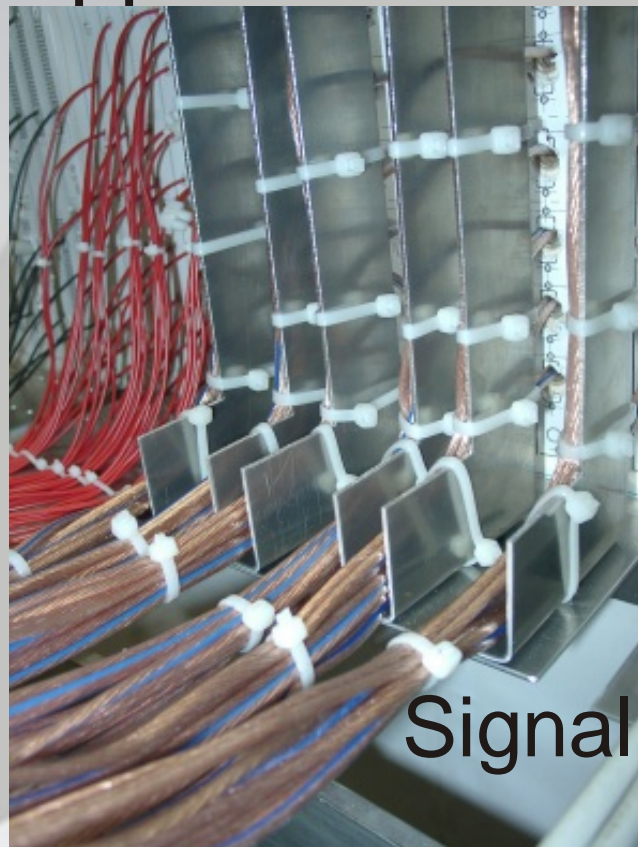
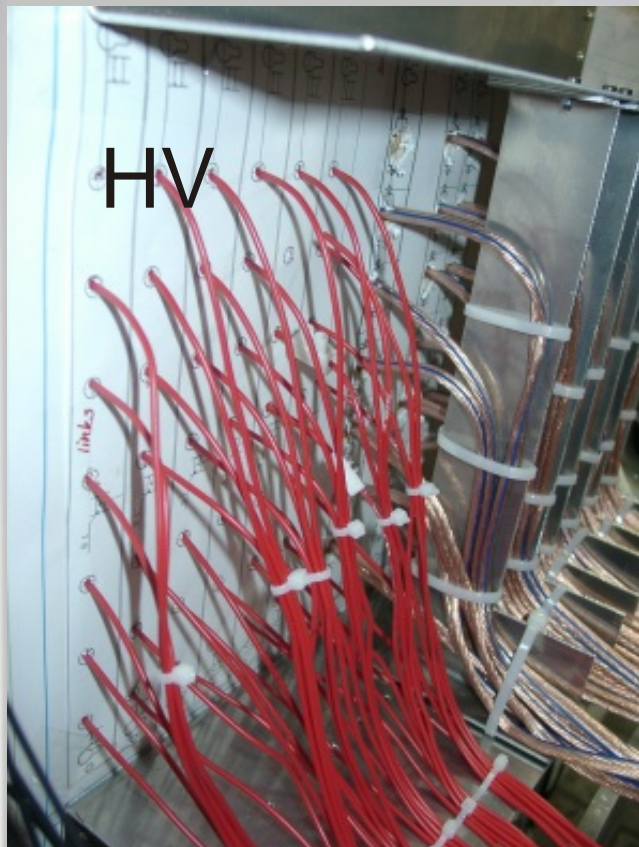
upper bounds of cable lengths
(cable from manifolds to UG-crate, R (RAM) W (WAKE))

Cabling at UG crate



maximal free cable length: 18 inch (NASA restrictions)

Cable supports at Wake crates



Wall 3 - Wake

Cable support



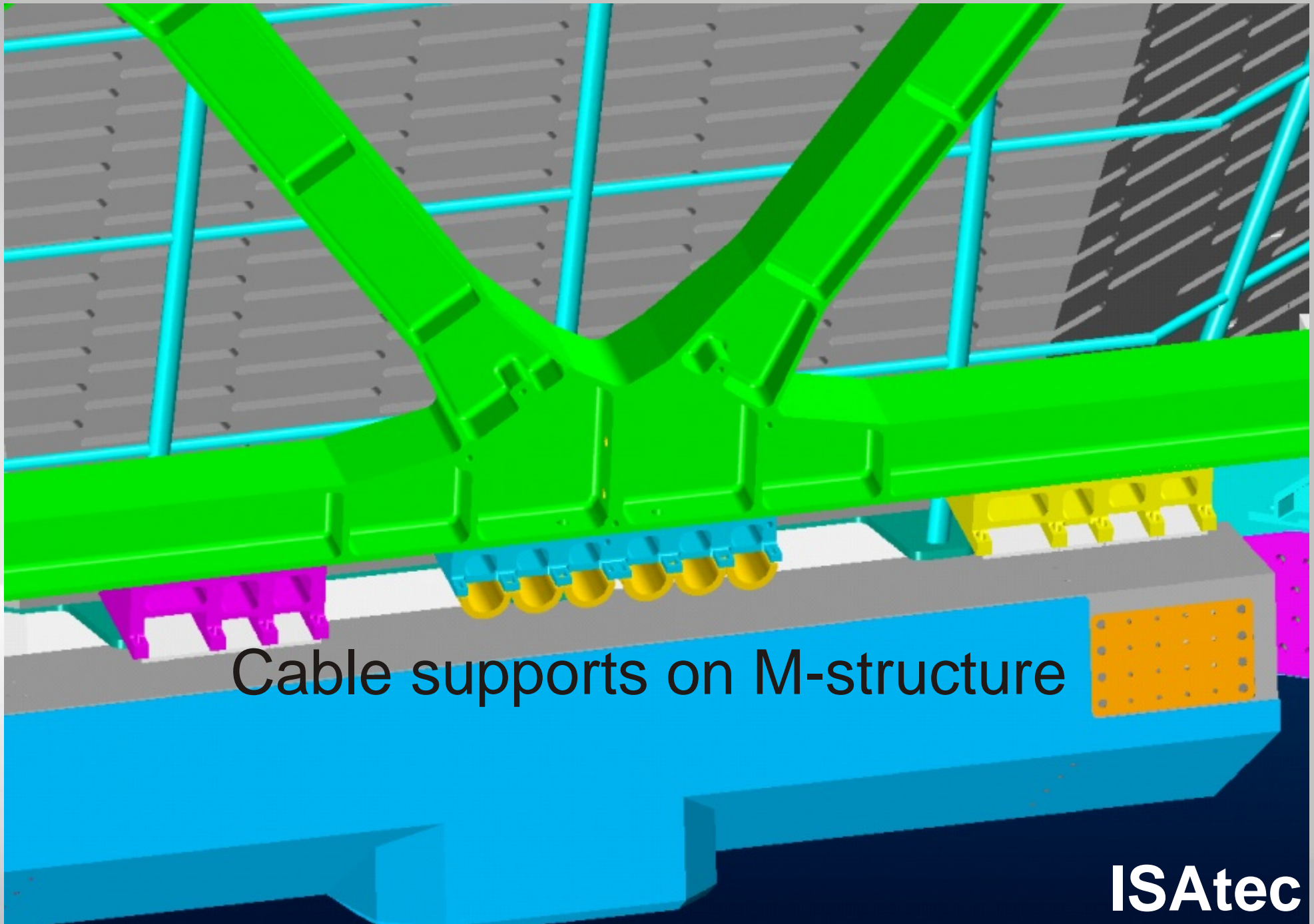
Cables to UG-crate
under left Rosengitter bar



TRD-Signal cables to U-crate
under middle Rosengitter bar

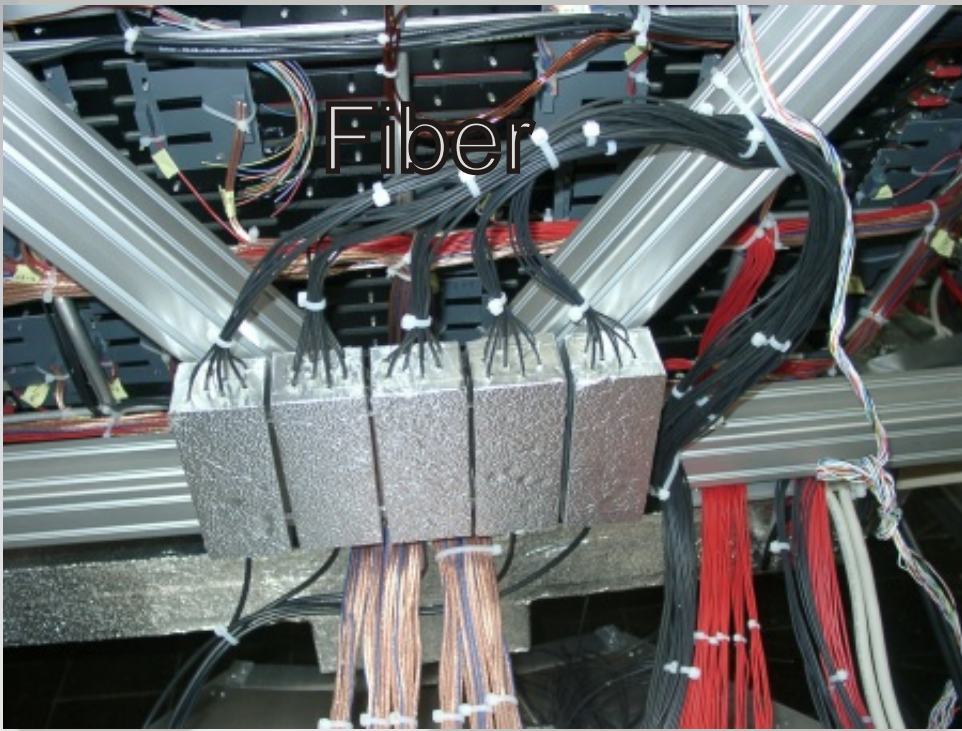


TRD-HV Cables to U-crate
under right Rosengitter bar
ToF cables to S-crate



Cable supports on M-structure

ISAtec

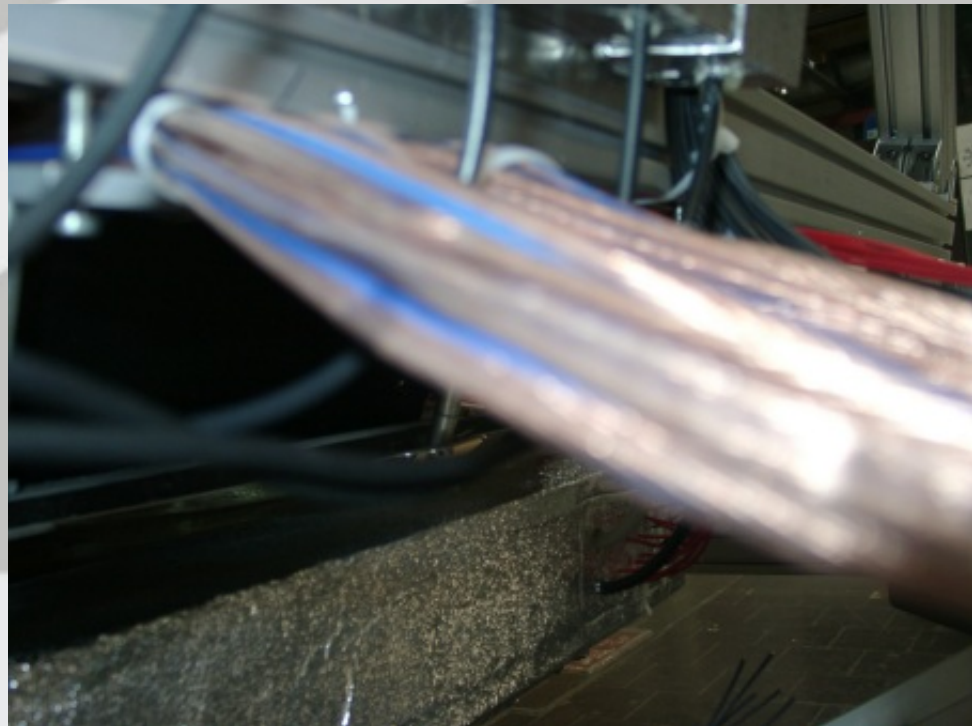


Fiber



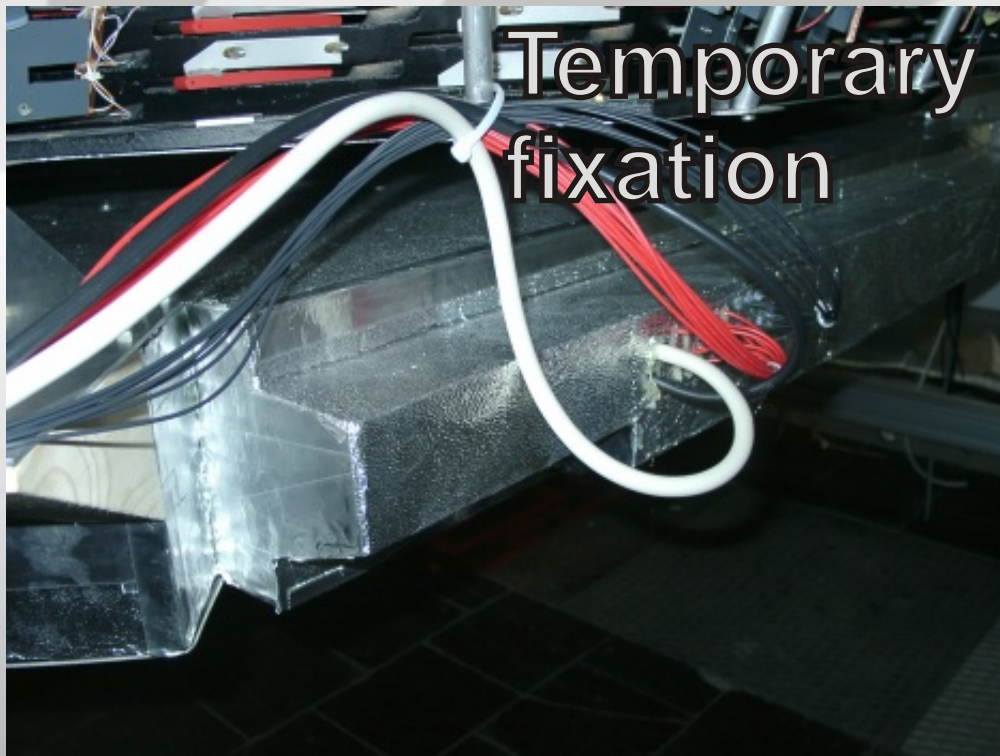
Signal

LFCR box
with cabling

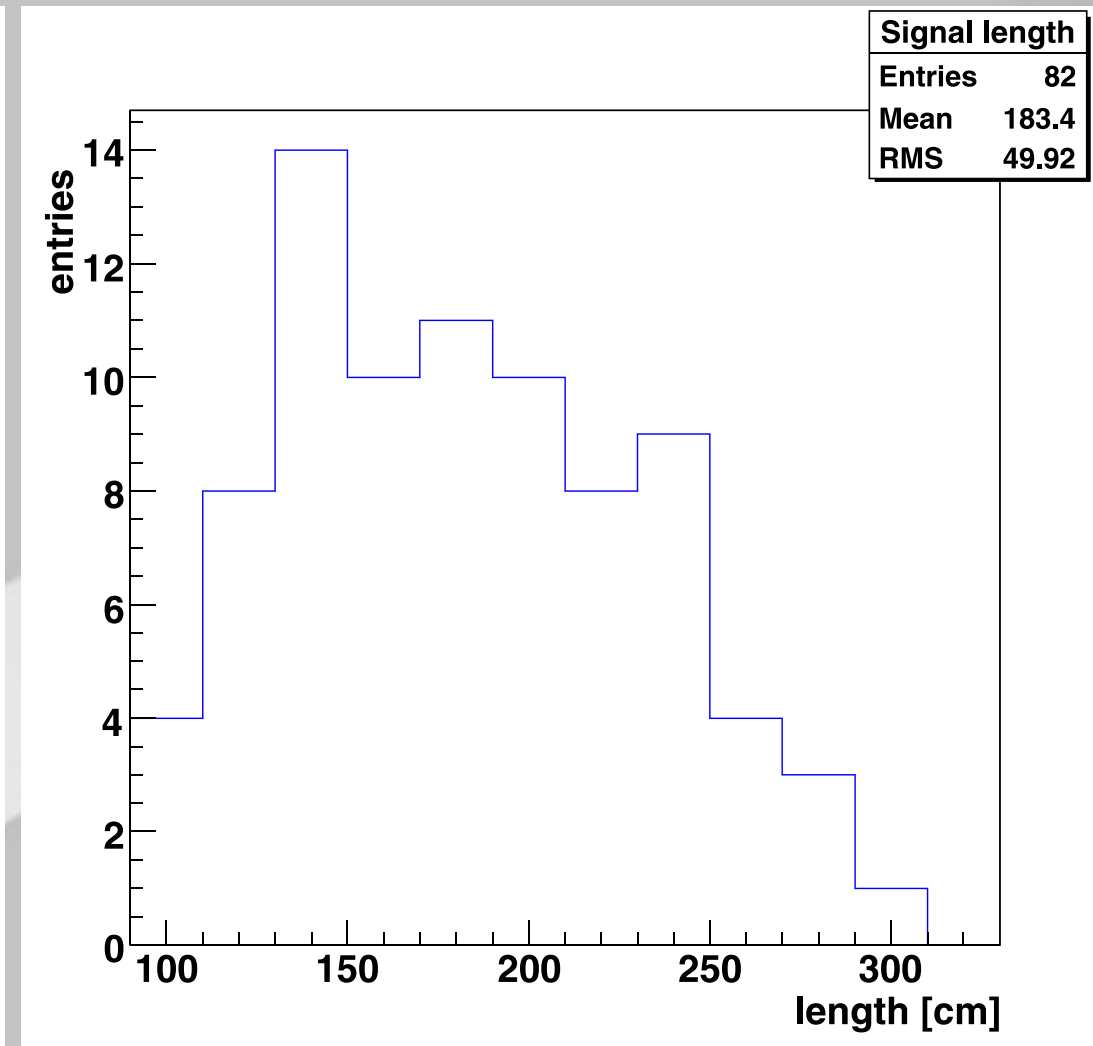
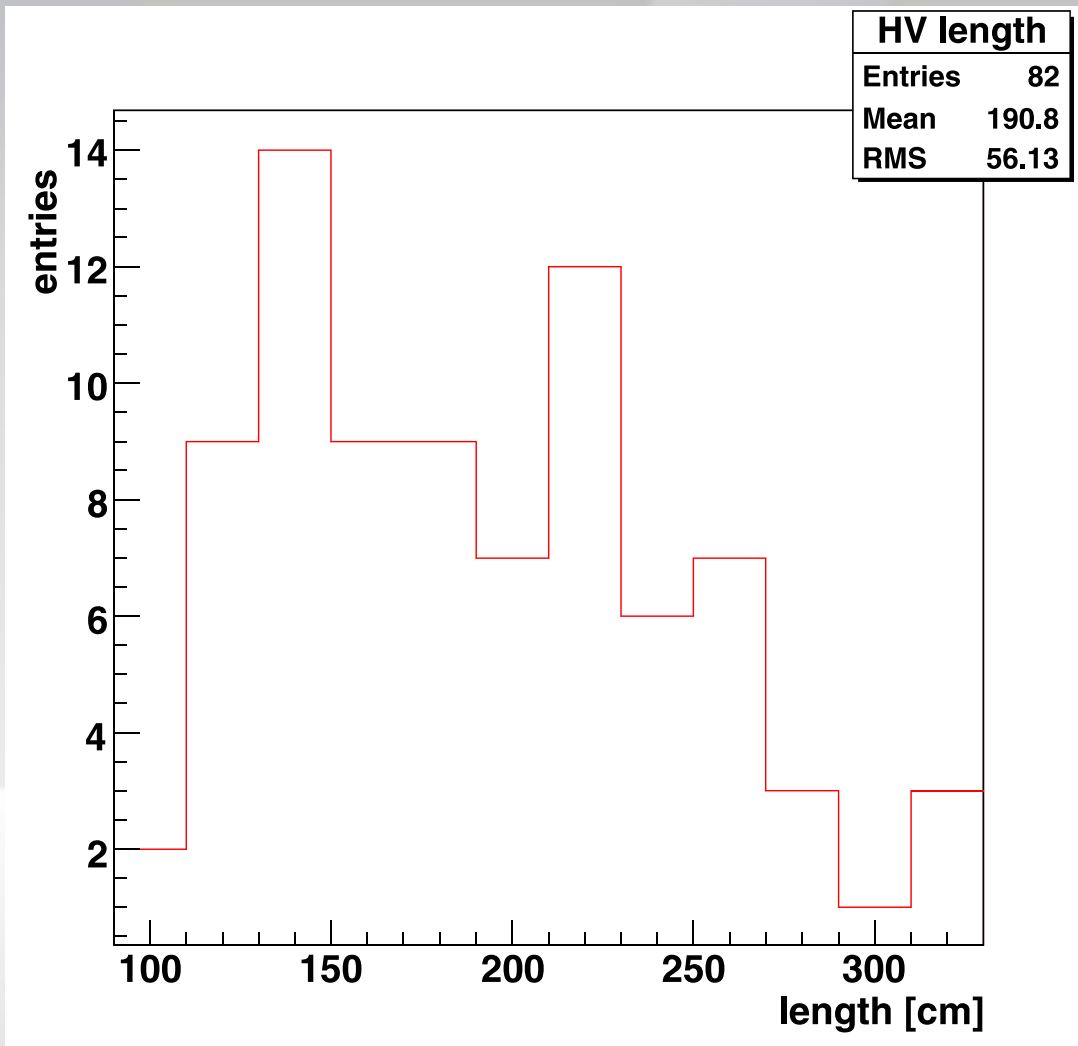


Wall 7 - Ram

Upper Time of Flight



Distribution of cable lengths for HV and signal cables



Proposal for lengths of spare cables:

- signal: 150, 250, 310 cm
- HV: 150, 270, 330 cm

Summary

- Mock-Up nearly completed
(only patch panel, larger LFCR ground plate and better cable supports at M-structure are missing)
- nearly all cable lengths for TRD (HV, signal, temperature) ToF & LFCR determined
upper bounds for lengths of manifold cables
- shipping to NASA in November for MLI tailoring