

Project Review



MPI für Physik
München

15.–16. December 2014

Mechanical Department



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Overview

- *Employees*
- *Project reports*
- *New machines, new technologies*
- *Some statistics*



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Employees



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4 graduated engineers, 5 certified engineers and one draftsmen are working at the engineering department

1 engineer from a temporary employment agency is supporting us in the BELLE project



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Employees

3 foreman and 16 technicians are working at the mechanical workshop, the fitter's shop, carpenter's shop and the storage

2 longtime and experienced employees, Mr. Hofmann and Mr. Tratzl, went into retirement. They are replaced by 2 young mechanics

A. Wimmer, R. Kastner and M. Wehrmeister manage the mechanical workshop since October



Employees

6 apprentices receive their mechanical education in our mechanical workshop

Mrs. Baßler, former apprentice in our workshop, received the "Azubi Preis" of the Max-Planck Society

She was one of the best 15 trainees of the MPG



Project Report

The mechanical department is involved in a lot of experiments, e.g.

- *MAGIC, CTA*
- *GERDA, GeDet*
- *ATLAS; MDT II, HEC II, SCT*
- *BELLE II*
- *AWAKE*
- *CRESST*
- *Future Accelerators*



Project Report ***MAGIC***



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The technicians of the mechanical department checked and serviced the MAGIC I and II telescopes in spring and autumn (as every year)

They finished the autumn check at the telescopes exactly one week ago



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Project Report MAGIC

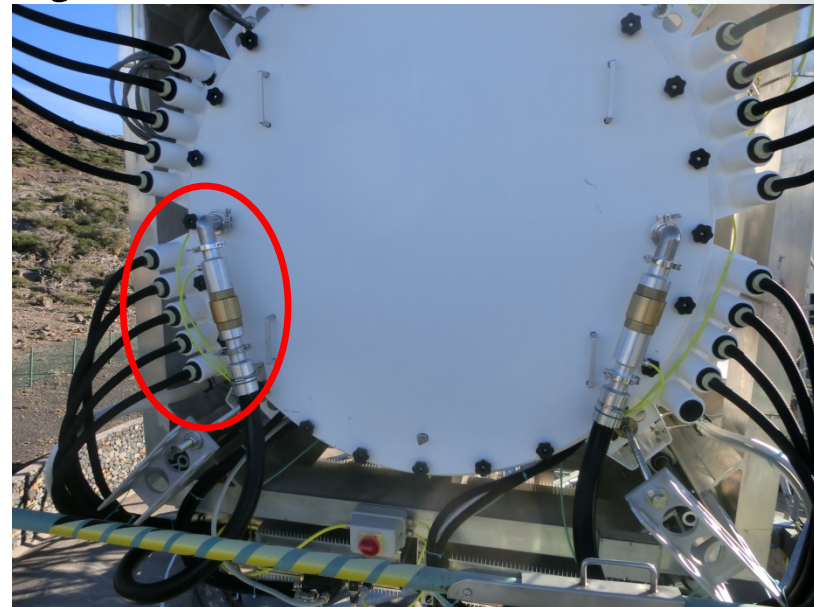


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We tested a new tool to install strain gauges or to change damaged CF tubs

A more efficient and automatically camera drying system has been mounted



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Project Report

CTA



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The prototype of the LST elevation drive has been tested

Segment of bow

Support structure

Crank lever

Motor with 10 kW

Two times, left and right



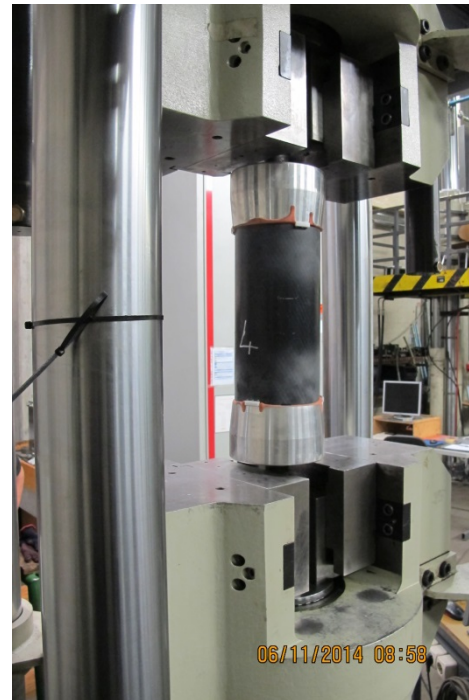
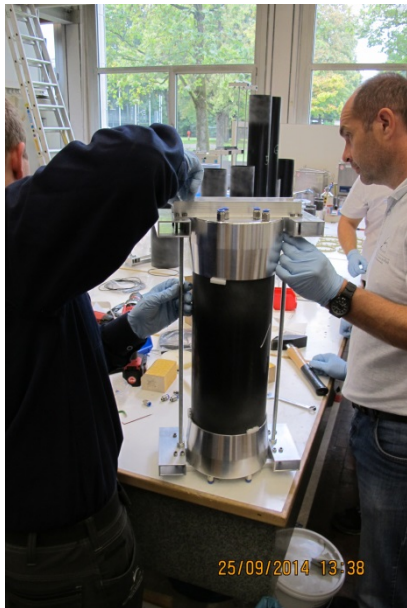
Project Report

CTA



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The CF tubes and end pieces are glued and tested



*360.000 dynamic
loads cycles
between 300 kN – 600 kN*

*The tube collapsed
at finale static load
1100 kN*



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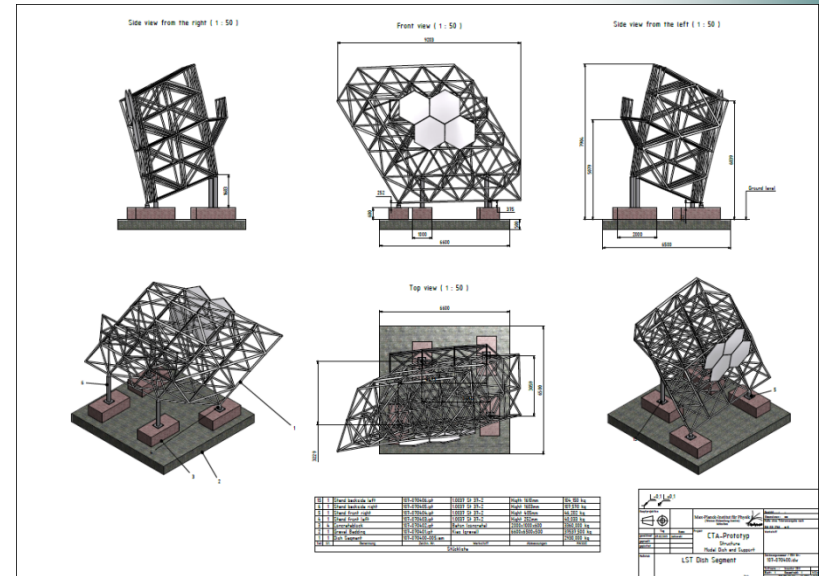
Project Report

CTA



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Last year I presented this drawing of the CTA structure



Since end of summer the structure is assembled and ready for use



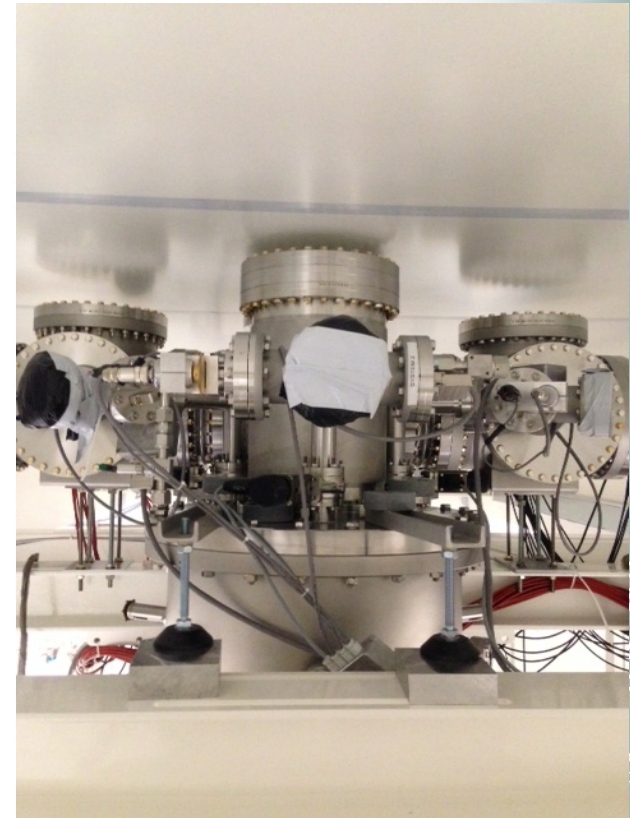
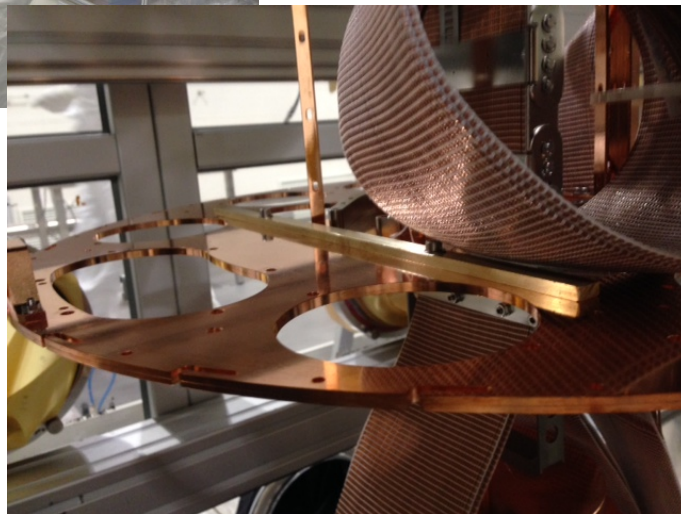
Project Report

GERDA



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The 250mm tube (phase II) is mounted at the Gran Sasso lab after an intensive test phase



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Project Report GERDA



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The Germanium transport container has been renovated



before ...



after renovation



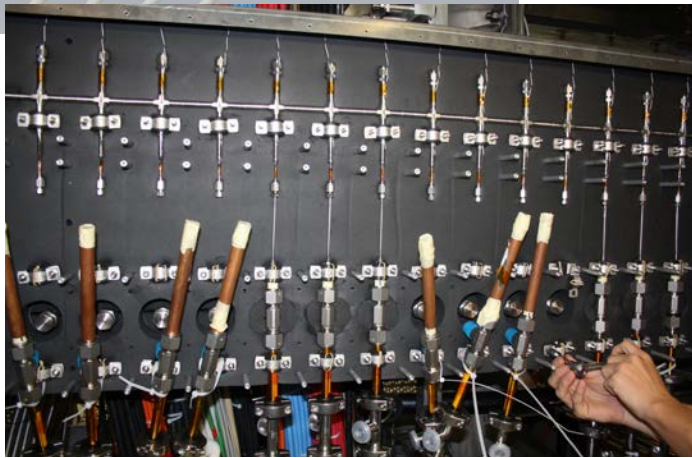
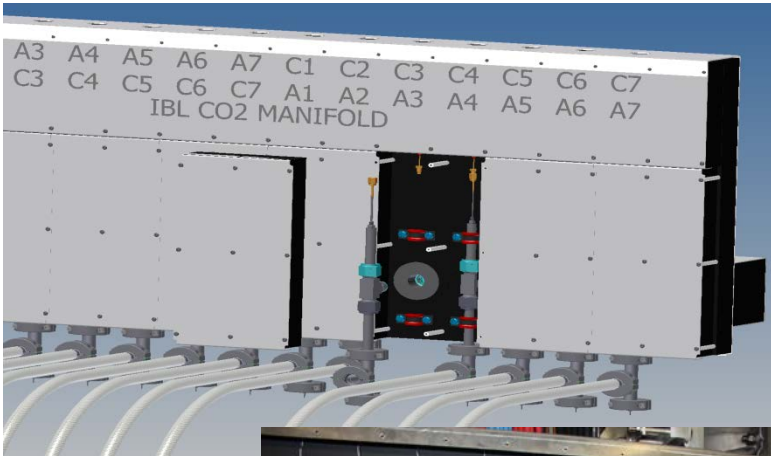
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Project Report

CO₂ cooling



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*The finale installation
in ATLAS*

*The manifold box, designed
and produced in our workshop*



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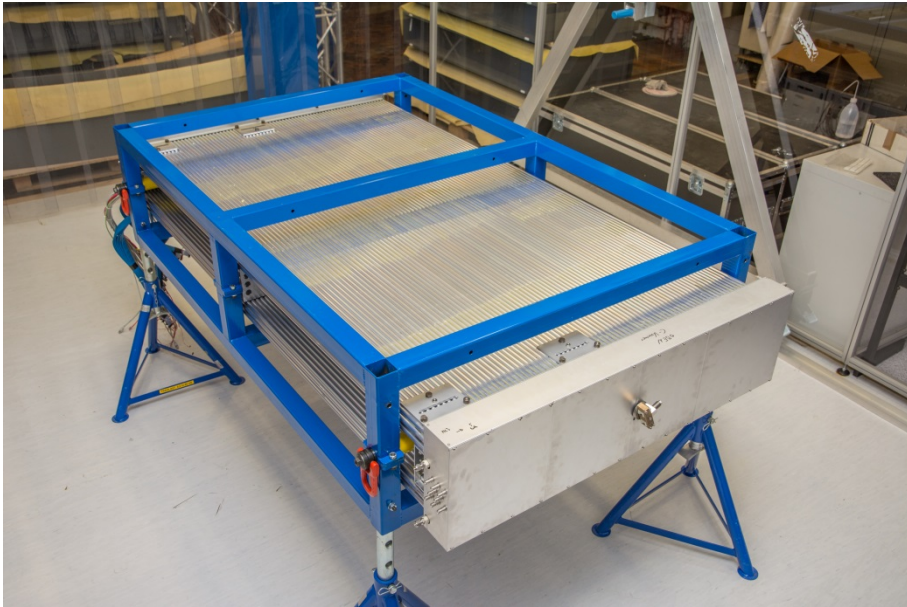
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ATLAS MDT II



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Last summer the two BME chambers have been mounted in ATLAS



The production of the next chamber type (BMG) started already with the tube assembly



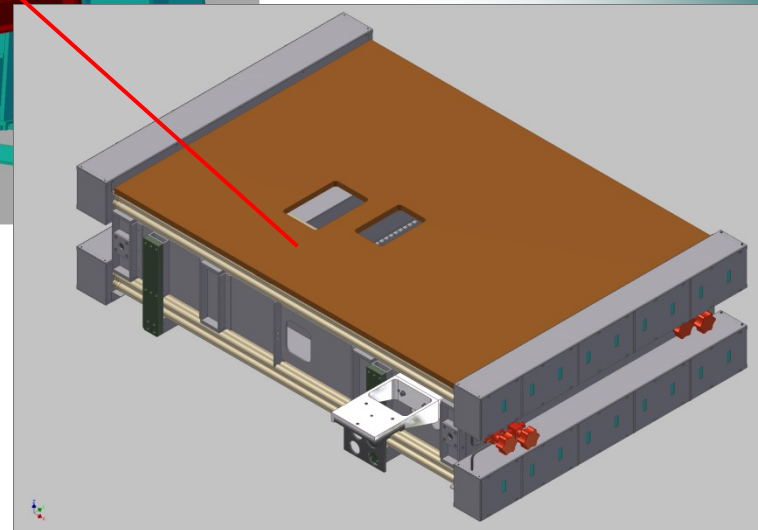
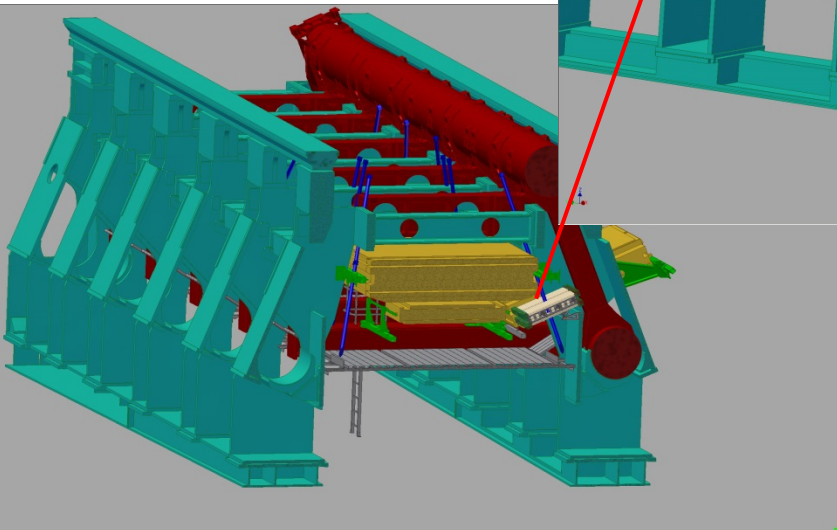
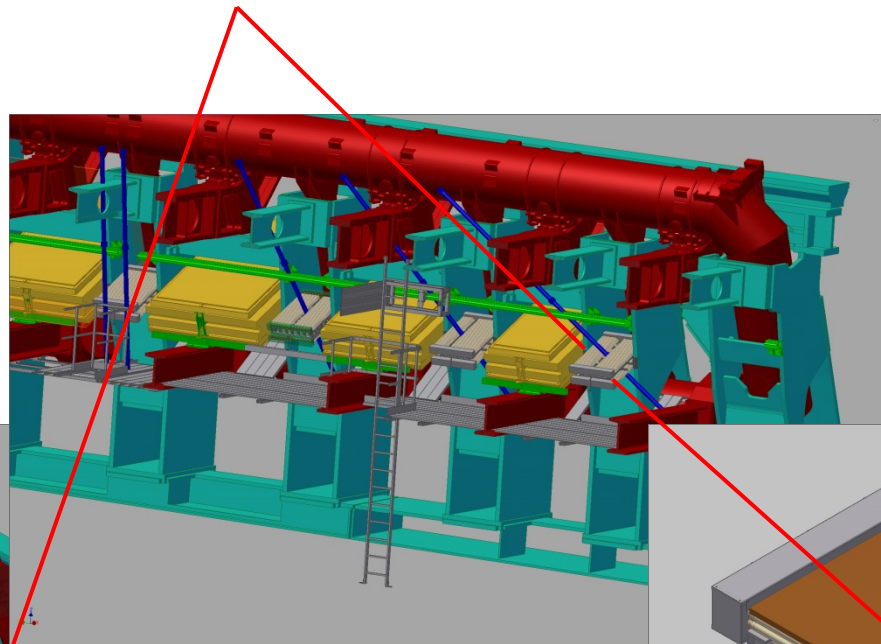
Project Report

ATLAS MDT II



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The design for the BMG Muon chambers is finished



Project Report

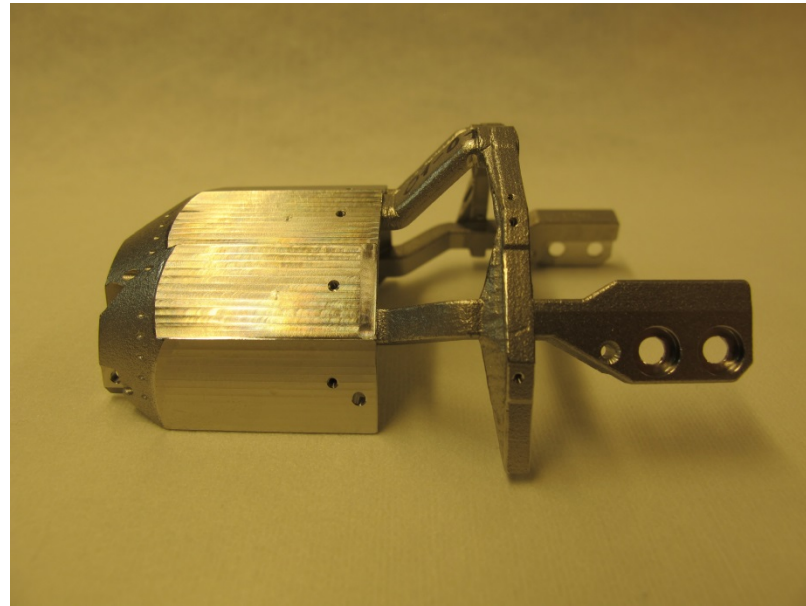
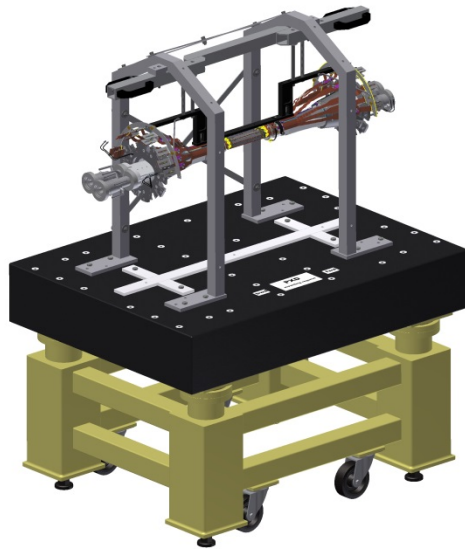
BELLE II



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The BELLE project is still in the design phase

*A design study for a
assembly setup*



*The finally cooling block for
thermal tests, a 3D metal print
(non magnetic stainless steel)*



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Project Report

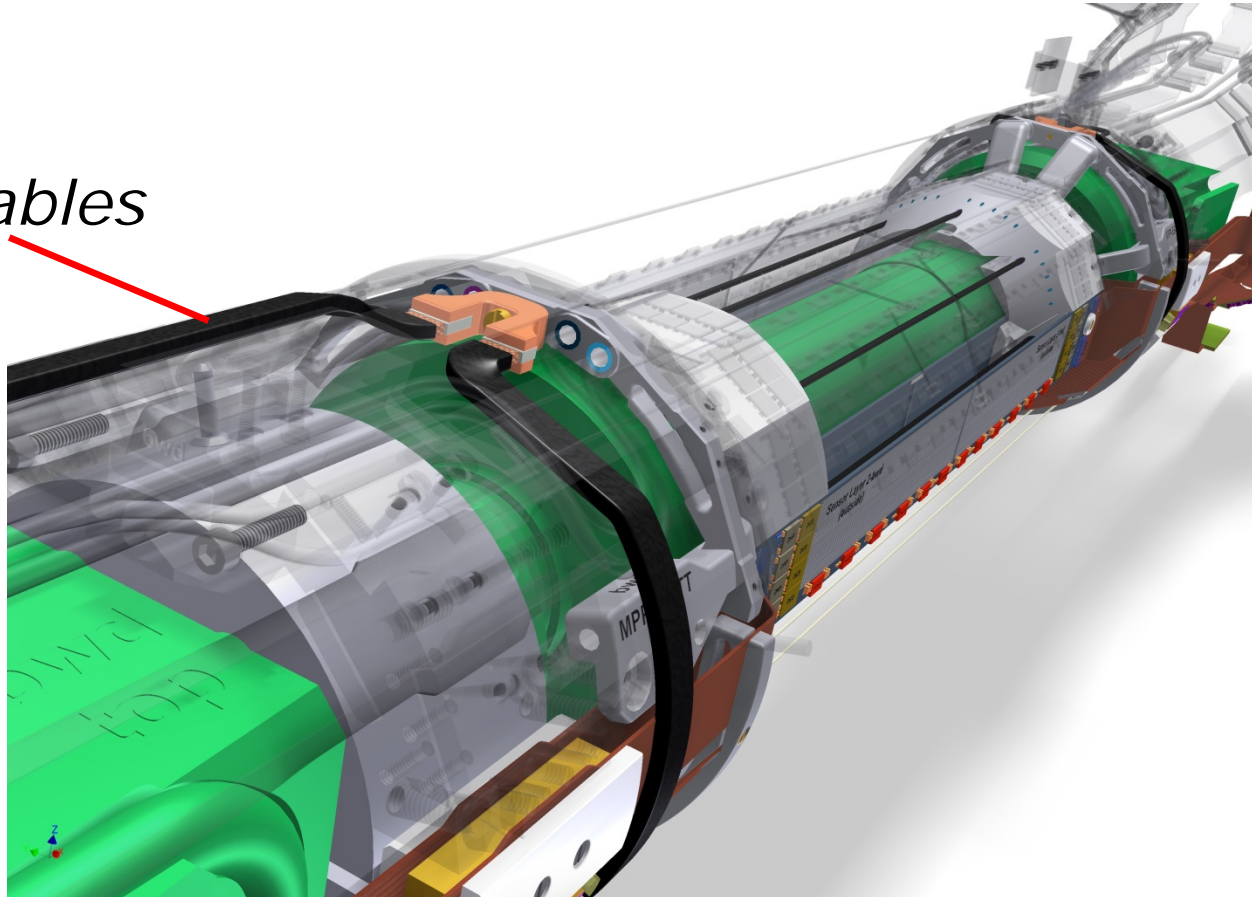
BELLE II



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Design studies for electrical grounding

Ground cables



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Project Report

BELLE II

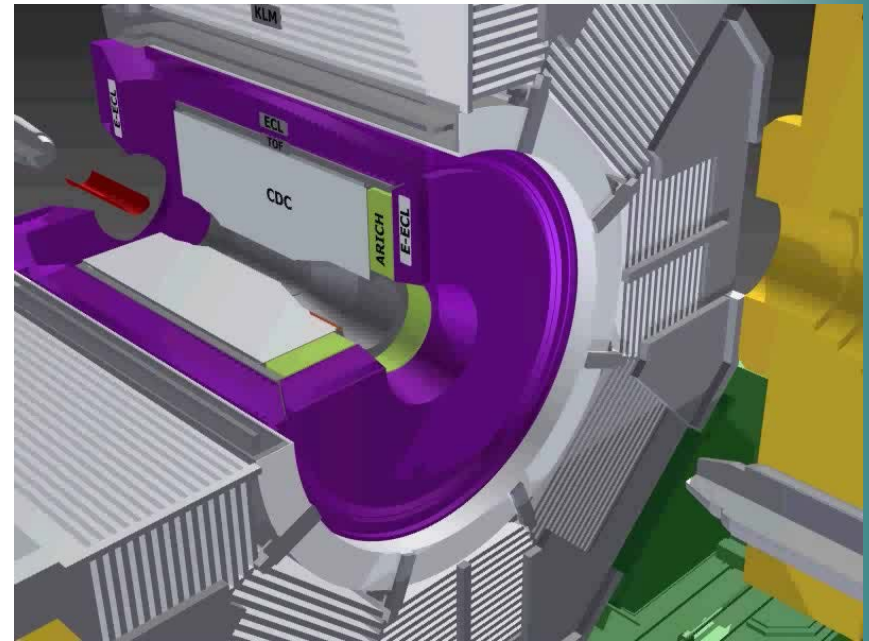


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Mock-up for an alternative installation method (AIM)



*Test setup
in our lab*



Simulated installation



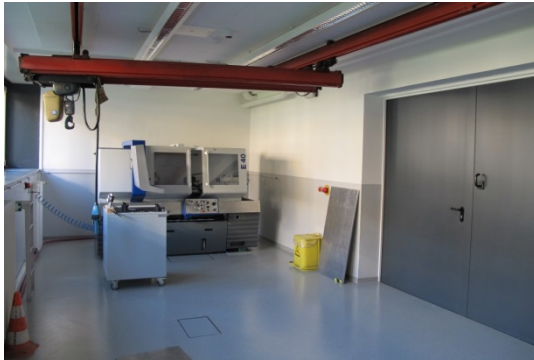
*Ready for
transport to KEK*



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new machines new technologies

*Last year I presented
this picture*



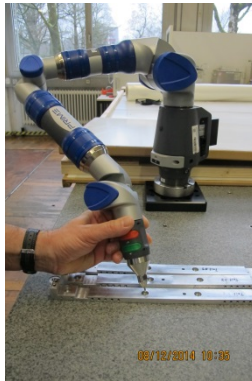
and now

*our new CNC lath
machine has been
installed*



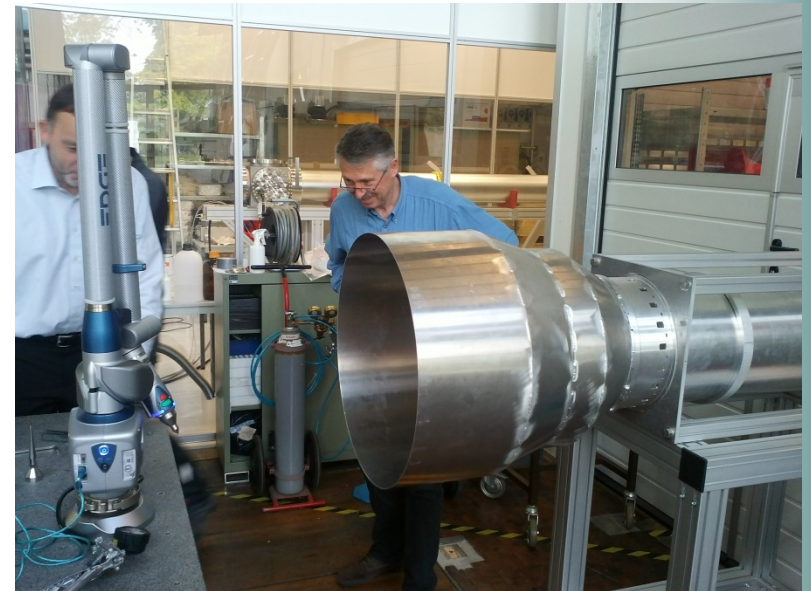
new machines new technologies

*We bought 2 transportable measuring machines
as part from the "Großgeräteantrag"*



*The small one for
daily using in
the workshop*

A large one



*First application to
check the AIM mock-up*



New machines New technologies

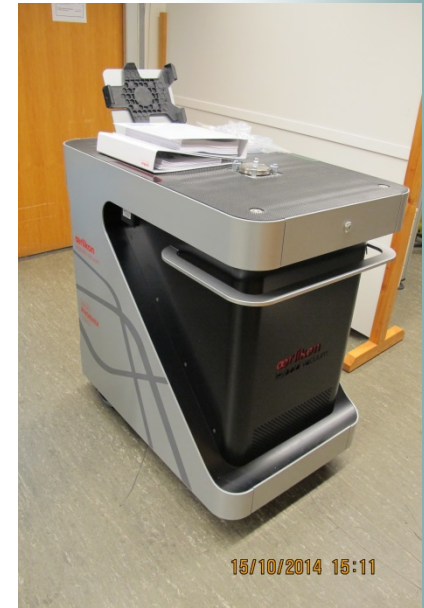


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*Parts of the “Erneuerungsprogramm”:
a water jet cutting system*



and



15/10/2014 15:11

*2 new He-leak
detectors*

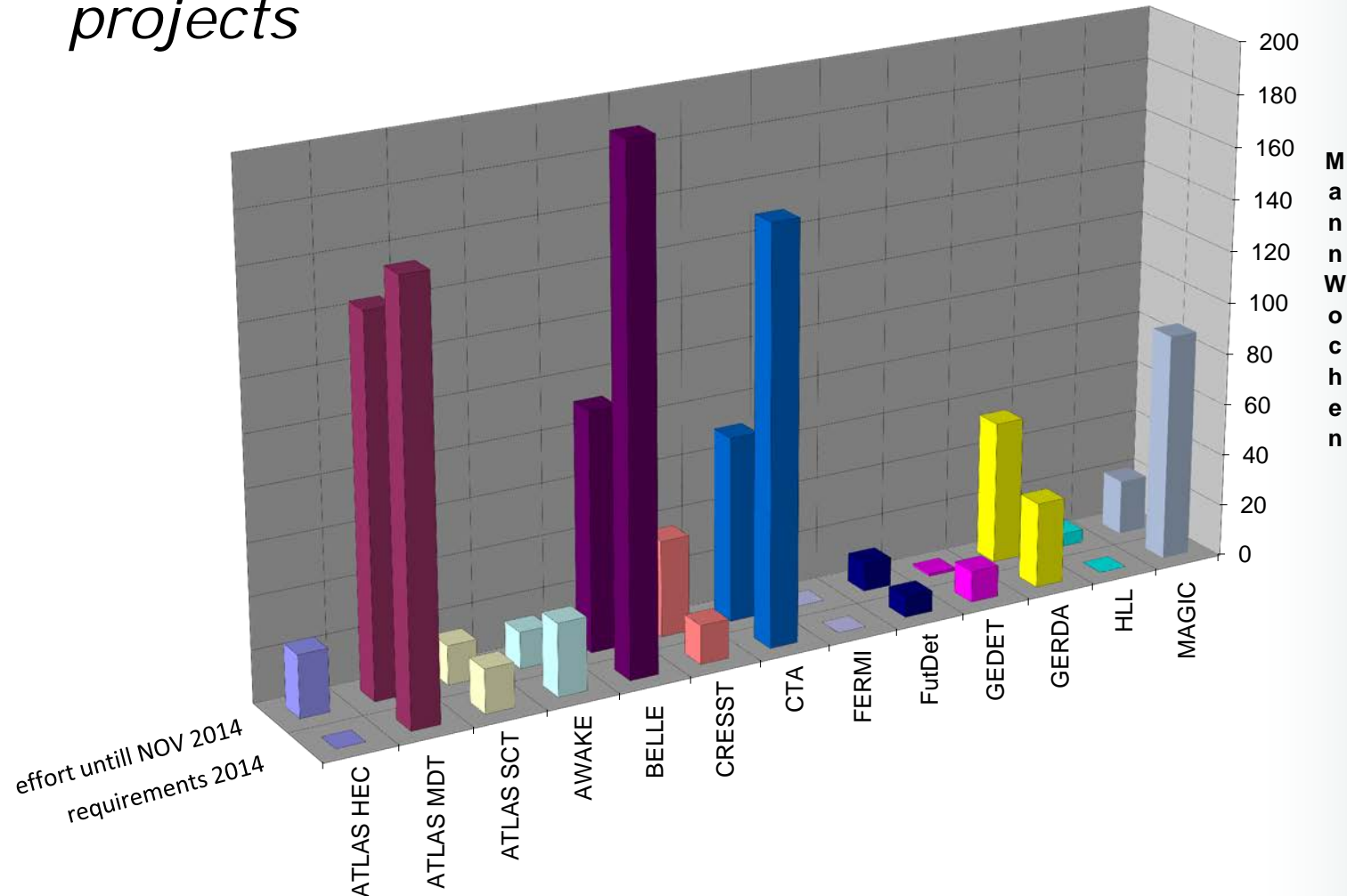


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A complete new technology at MPP!

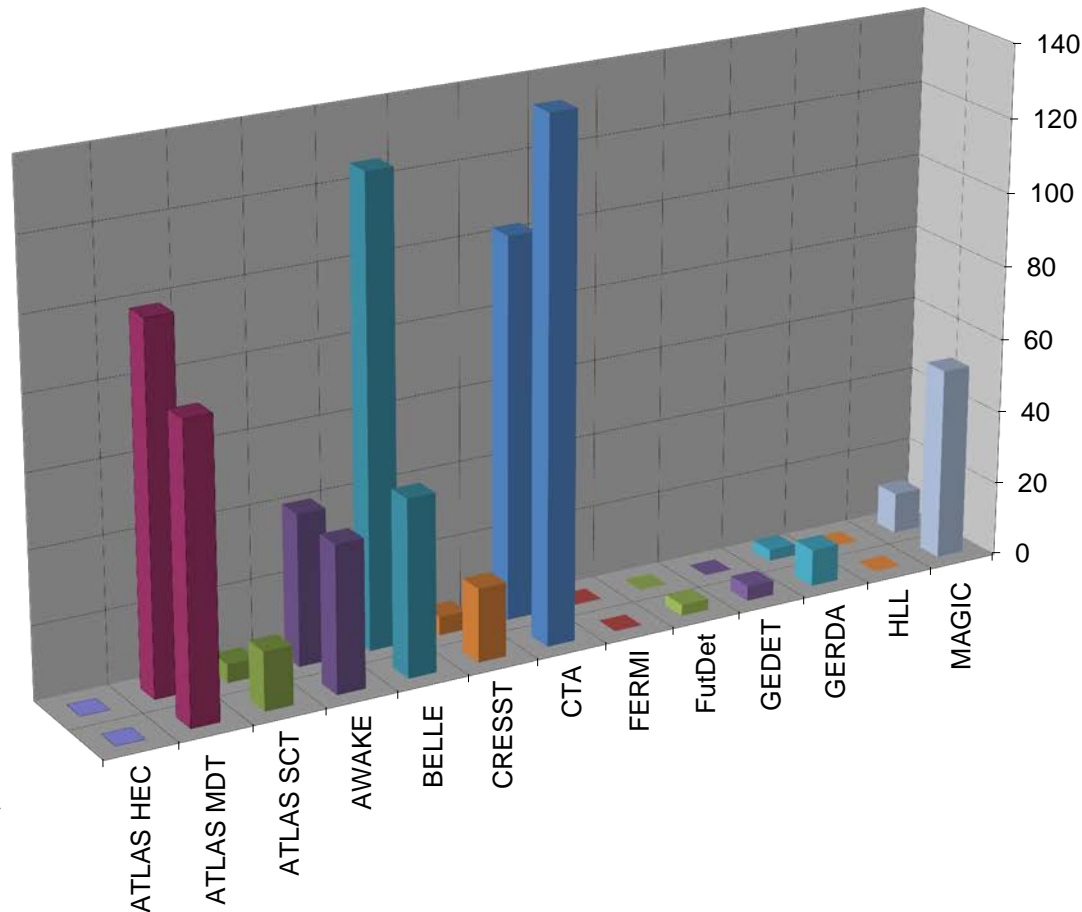
Some statistics

Time and effort of the workshop for the projects



Some statistics

Time and effort of the design office for the projects



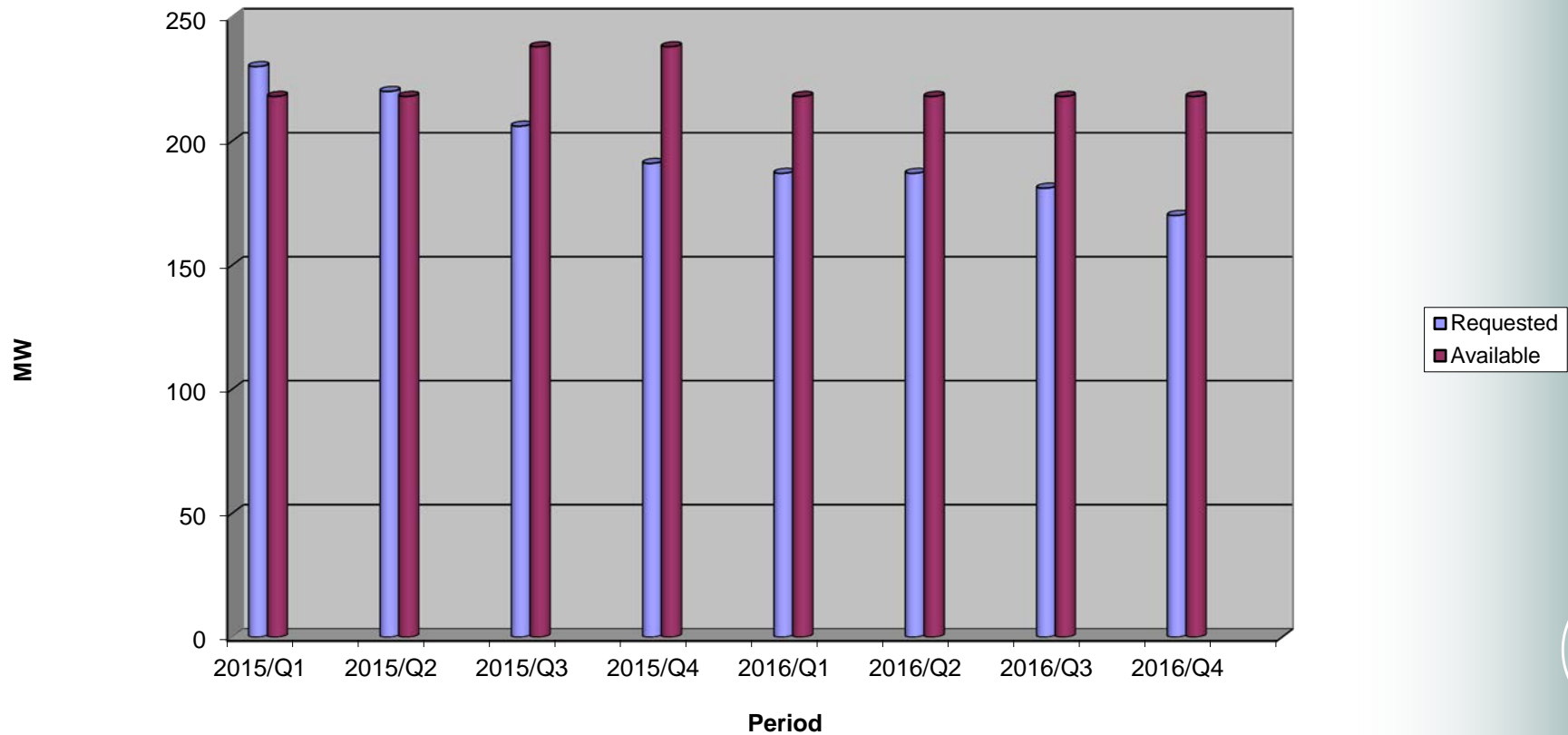
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effort until NOV 2014
requirements 2014



Some statistics

Demands on the Mechanics Division 2015/16





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Thank you for your attention



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