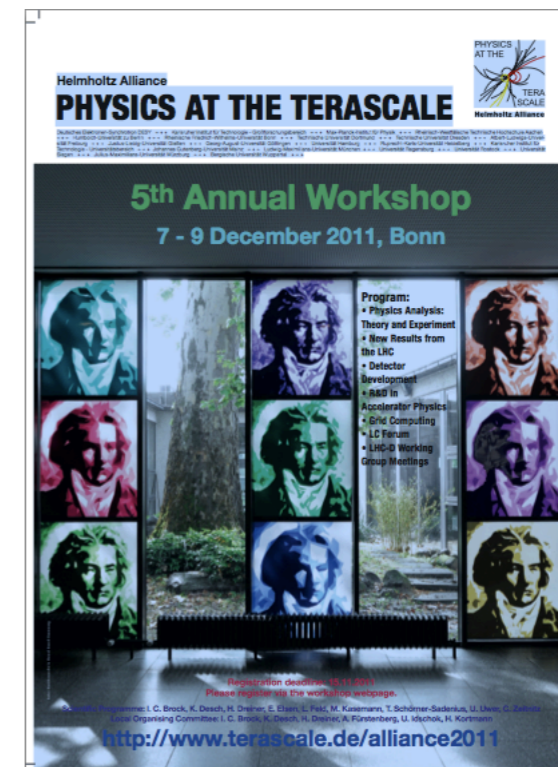


Physics at the Terascale Accelerator Research

J. Osterhoff on behalf of E. Elsen



Goals of Project Accelerator

- Establish accelerator physics on a broader scale in Germany
 - Engage universities
 - Establish accelerator physics as a science (not just supportive role) in universities and research centers
 - Very important: attract students
- Program largely successful
 - HGF ARD initiative
 - Verbundforschung engages in topic
 - Formation of the “Komitee für Beschleunigerphysik”

DPG Talks
Terascale Schools
YIG

New research
topics included

Participation in Project Accelerator

- Universities
 - Bonn*
 - Dortmund
 - Göttingen
 - Hamburg*
 - Wuppertal*
- MPI for Physics
 - Munich
- HGF
 - DESY*
- CERN

using infrastructure of

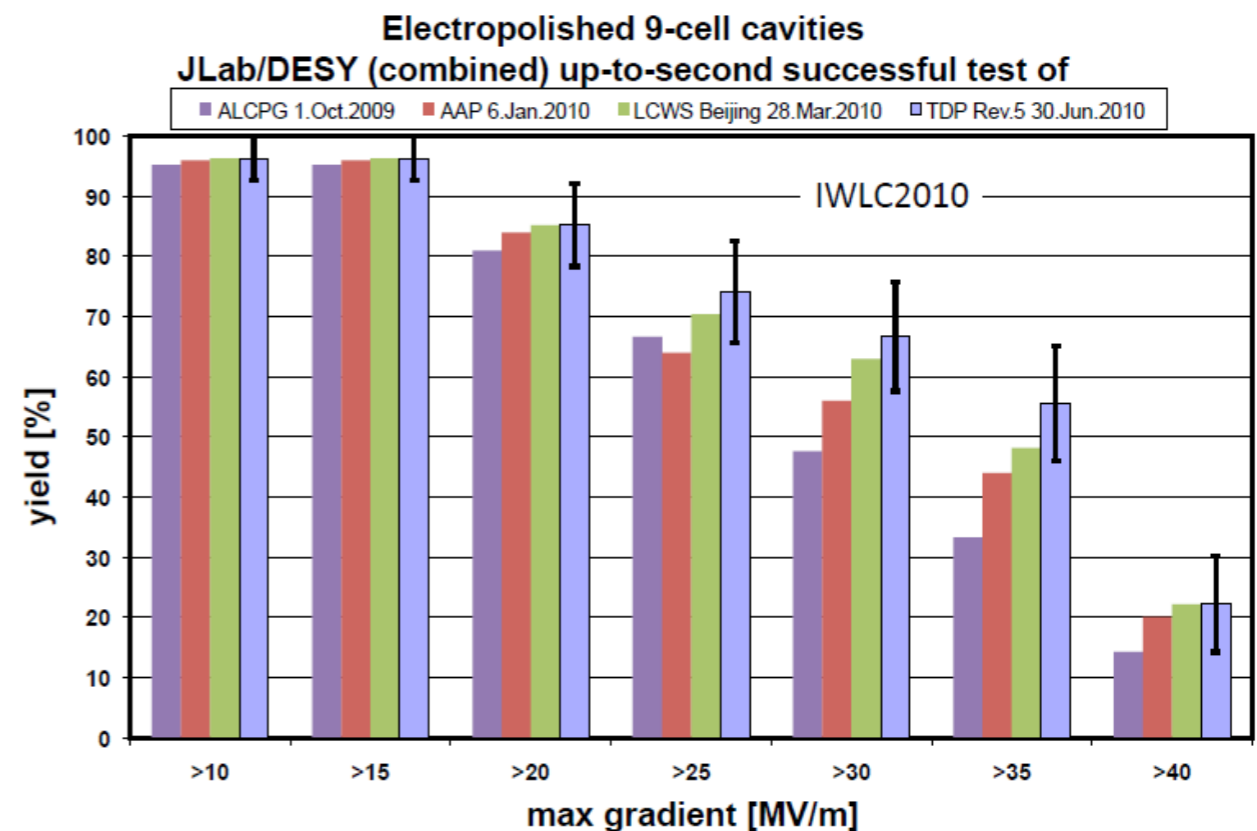
- DESY
- ELSA
- CERN

Topic: Superconducting RF

- DESY, Wuppertal and Göttingen
- Several theses related to improvement of accelerating gradient for SRF cavities
- Worldwide programme improved yield for high-gradient cavities (>35 MV/m)



Results will enter
Technical Design
Report 2012 for the
ILC



Topic: Beam Dynamics

- Bonn
 - New beamline for detector test
 - Compton polarimeter
- Dortmund
 - Involvement in FLASH
(experiments for EEHG, ORS)

*Common project with
Terascale Project
Detector*

Topic: Plasma Wakefield Acceleration

- Hamburg, DESY
 - Establishment of a YIG in Sep 2010 at Hamburg, now includes 4 postdocs, 2 PhD students, 4 more students
 - Experiments planned at REGAE, PITZ, FLASH, various laser labs
 - Electron beam and laser-driven wakefield studies
 - Appointments of B. Foster and F. Grüner as professors at UHH
- MPI Munich, CERN
 - Proposal of a proton driven experiment at the SPS

*made possible because
of the infrastructure
at the large research
centres*

*support via
Helmholtz ARD*

*Formation of
EuroNNAc network
inside EuCARD*

Summary

- Accelerator research emerges as a research field
 - BMBF Verbundforschung, Helmholtz ARD
 - Networking inside Terascale continues to be important
 - Coherent programme
 - Terascale Accelerator Schools (next on in Bonn)
- Topics
 - Considerable progress in SRF → ILC
 - Establishment of plasma wakefield acceleration on a broad basis