

Spain at CERN

29/10/2014

The Magnets, Superconductors and Cryostat Group: An Overview

MSC mandate

- Design, construction and measurement of superconducting and normal conducting magnets for the CERN accelerator complex
- Integration in the CERN accelerator complex, magnet cryostats and associated quality control
- Support to operation of the accelerators for magnets, magnet performance, and devices (current leads)
- Development of associated technologies for present and future accelerators, and specifically:
 - Superconductors
 - Superconducting electrical devices
 - Insulation and polymers
 - Magnetic measurements
 - Magnetic materials

Centers of competence

- Accelerator magnet (NC/SC) technology
 - Design, operation, analysis
 - Models and prototypes
 - Production and integration (cryostats, current leads)
- Superconductors
- Magnetic materials
- Polymers and magnet insulation
- Superconductor test facilities (materials, magnets, other devices)
- Magnetic field measurement

Magnets, Superconductors & Cryostats

Staff Members

L. BOTTURA Group Leader
G. DE RIJK Deputy Group Leader

Group Leader Office:
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R. DECREUSE-MICHAUX
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Superconductors

SC magnet lab

SC magnet factory

SC magnet test stations

Resistive magnets

Magnetic field measurements

Cryostats and integration

Superconductors & Devices
SCD

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J. FLEITER
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J. HURTE
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G. PEIRO
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C. SCHEUERLEIN
E. SEILER

SC Magnet Design & Technology
MDT

G. DE RIJK

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S. CLEMENT
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C. FERNANDES
P. FERRACIN
R. GAUTHIER
P. HAGEN
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G. KIRBY
L. LAMBERT
G. MAURY
J. MAZET
J. PEREZ
S. SEQUEIRA LOPES
D. SMEKENS
E. TODESCO

Large SC Magnet Facility
LMF

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M. DURET
D. ETIEMBRE
R. FAES
L. FAVIER
J. GOMES DE FARIA
L. GRAND-CLEMENT
J.M. HUBERT
F. LACKNER
Ch. LOFFLER
S. LUZIEUX
P. MARTINS
M. POZZOBON
H. PRIN
R. PRINCIPE
S. TRIQUET

Superconducting Magnet Test Facilities
TF

M. BAJKO

H.M. BAJAS
M. CHARRONDIERE
M. CHAMBIOT-CLERC
G. DIB
J. FEUVRIER
C. GILOUX
P. VIRET
G.P. WILLERING

Magnets Normal Conducting
MNC

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J. BAUCHE
D. BODART
M. BRUYAS
P. CATHERINE
O. CRETTEZ
M. DUMAS
P. FESSIA
C. LOPEZ
R. LOPEZ
A. MILANESE
M. MODENA
A. NEWBOROUGH
G. PERRIN-BONNET
V. PRIETO HERMOSILLA
D. SCHOERLING
P. SCHWARZ
M. STRUIK
P. THONET

Magnetic Measurements
MM

S. RUSSENSCHUCK

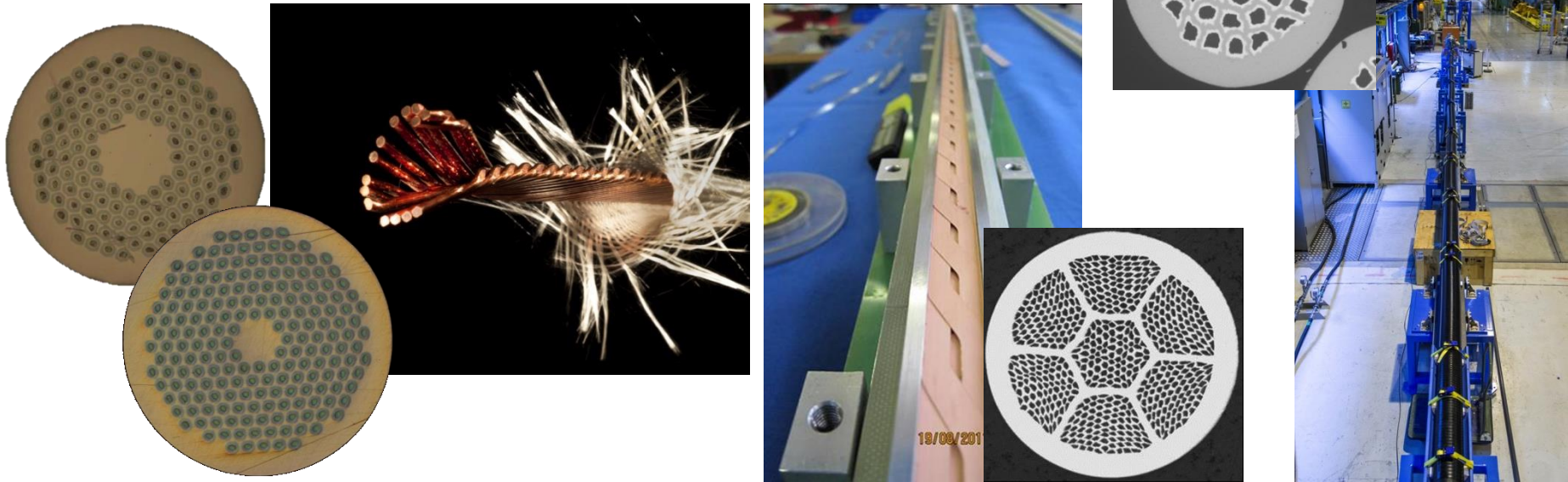
R. BELTRON MERCADILLO
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D. GILOTEAUX
D. OBERSON
V. REMONDINO
T. ZICKLER

Cryostats & Machine Integration
CMI

V. PARMA

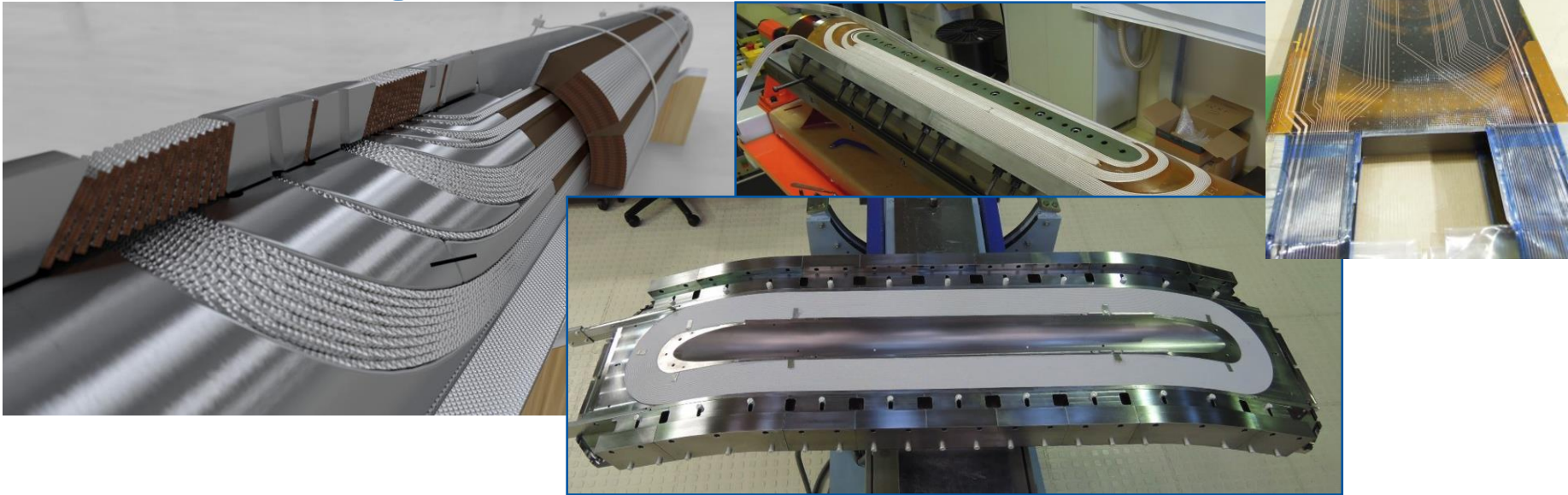
G. BARLOW
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S. LE NAOUR
Y. LECLERC
A. MUSSO
M. SOUCHET
J.Ph. TOCK
A. VANDE CRAEN
L. WILLIAMS

Superconductors



- Development and procurement of SC materials, wires, cables
- SC laboratory
- SC devices (current leads, power transmission cables, ...)

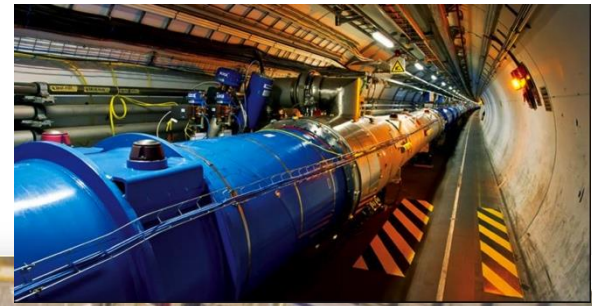
SC magnet lab



- Incubation center for SC magnet design, from concept to prototyping, and development of SC magnet technology
- Polymer laboratory
- Support to LHC operation (magnetic model and magnet performance)

50,000 tons

SC magnet factory



- Responsibility for LHC SC magnets: repair, spare manufacturing, and new magnets for LHC upgrades (Nb_3Sn)
- (Large) tooling and magnet components
- Logistics and mechanical workshop

SC magnet test stations



- Test of LHC magnets and other devices (current leads, diodes, power transmission cables, ...)
- Development of required test installations, test technology and instrumentation

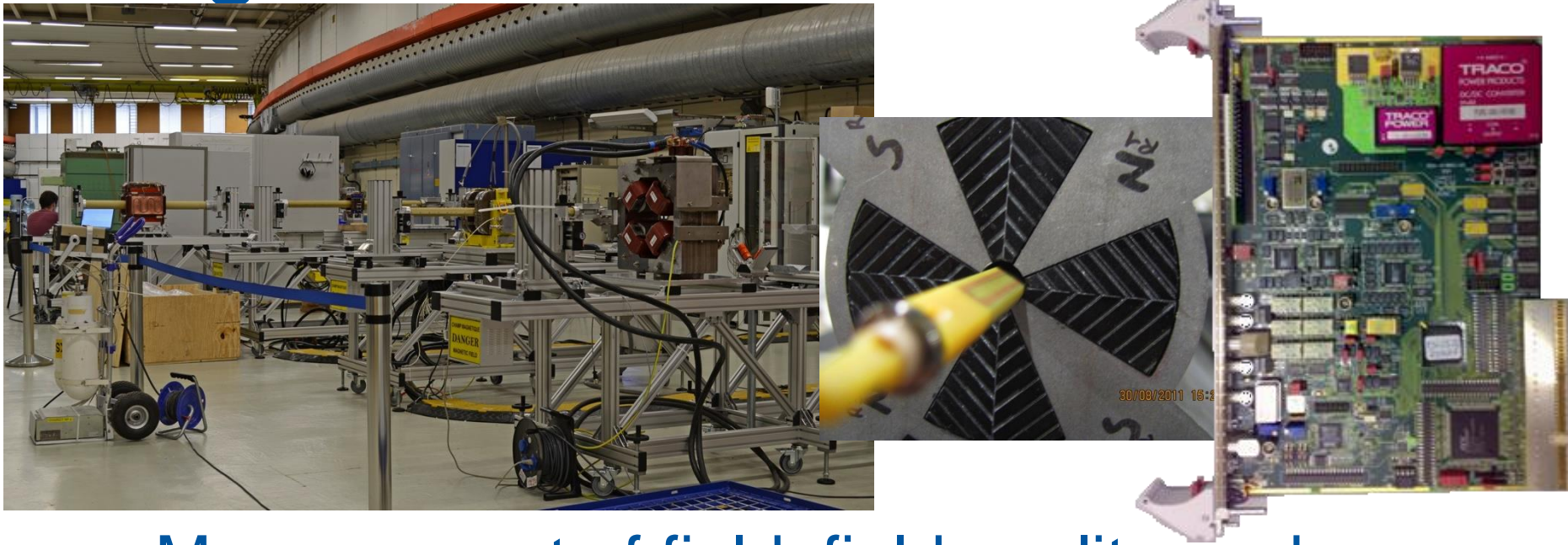
50,000 tons

Resistive magnets



- Responsibility for CERN resistive magnets: operation, repair, spare manufacturing, new magnets for all projects
- Tooling and magnet components
- Magnet workshops and test stations (including radioactive magnets)

Magnetic field measurements



- Measurement of field, field quality, and magnetic alignment in all CERN accelerator magnets
- Magnetic measurement technology

Cryostats and integration



- SC magnet cryostats, tooling and workshops
- Machine integration of SC magnets and devices
- Thermo-electro-mechanical design and technology for cryogenic applications



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