
TE-MPE

**Machine Protection
and Electrical Integrity Group**

**First Plenary Group Meeting
22/01/2009**

...Let me introduce myself - Andrzej SIEMKO

- **1978 – 1984** Study of Physics in Warsaw
- **1984** Graduated from the Faculty of Applied Physics and Applied Mathematics of the Warsaw University of Technology
- **Diplomas:**
 - **Master of Sciences**, obtained in from Institute of Physics of the Warsaw University of Technology,
 - Thesis entitled “**Analysis of Properties of Magnetic Clusters Exhibiting Frustration Phenomenon**”.
 - **Ph.D.**, Institute of Physics of the Polish Academy of Sciences and Max Planck Institute in Stuttgart,
 - Thesis devoted to “**Stress-induced Magnetostriction in Metallic Glasses**”.

- **1984 – 1992** academic career at the Institute of Physics of the Polish Academy of Sciences
- **Main subjects of research:**
 - Interface and exchange interactions
 - Magnetocrystalline anisotropy and magnetoelastic interactions
 - Domain structure and phase-transitions, influence of disorder on magnetic properties
 - Superconductivity and high-T_c superconductors
- CERN – Scientific Associate 1992 - 1993
- CERN – Staff member since 1994
- **Main projects:**
 - LHC model and prototype magnet R&D:
 - Novel quench diagnostic concepts and techniques
 - Quench behaviour and magnet protection
 - Construction of the Superconducting Magnet Test Facility in SM18
 - Series tests of main LHC magnets
 - Series tests of special LHC magnets

MPE Mandate

- Support LHC operation and maintain state-of-the art technology for magnet circuit protection and interlock systems for the present and future accelerators, magnet test facilities and CERN hosted experiments.

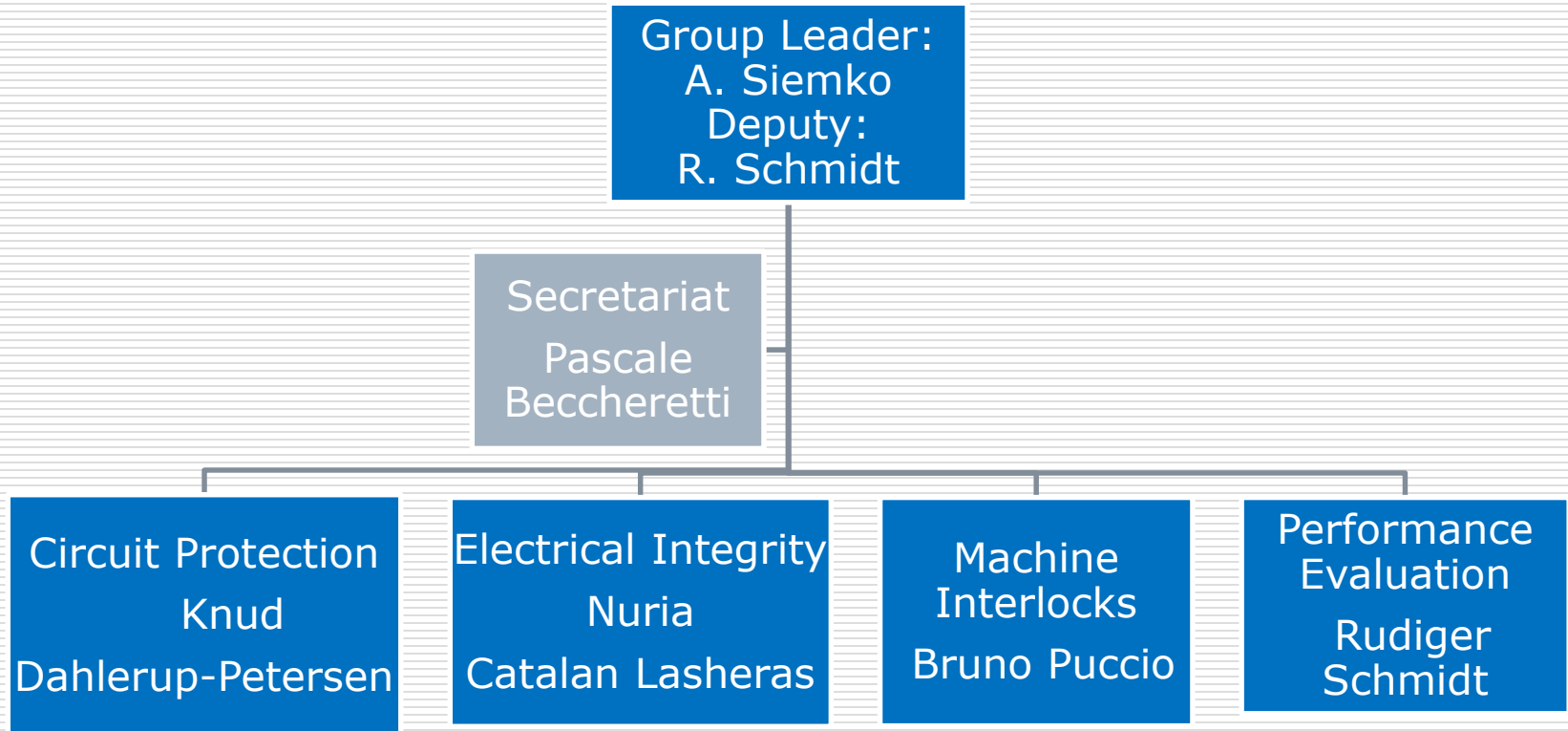
MPE Mandate Description

- Coordination of the commissioning of the LHC magnet system (“Hardware Commissioning”) and magnet circuit performance evaluation.
- Coordination of the LHC machine protection systems and responsibility for its coherence and overall performance.
- Specific studies related to machine protection for topics that go across different systems.
- Responsibility for the electrical integrity of magnet circuits.
- Responsibility for the exploitation of DFBs, DSLs and their auxiliary equipment.
- Responsibility for the electrical quality assurance (ELQA) during magnet interconnections and hardware commissioning as well as for electrical diagnostics and interventions during operation.
- Responsibility for the magnet protection system and machine interlocks for the CERN accelerator complex, including design, construction and exploitation.
- To guarantee permanence of expertise, follow the state-of-the-art and to develop knowledge for design, construction and operation of failsafe and reliable electronics.

MPE – Main Challenges for next 2 years

- The main challenge for the MPE group will be to commission the magnet system to 7 TeV level and to assure safe operation with beams at this energy.
- Crucial for the magnet circuit protection challenge will be production, installation and commissioning of the new quench detection and bus-bar protection system.
- Crucial for the machine protection challenge will be to commission all the different machine protection elements together and to assure the system coherence.
- The MPE group will be involved in the machine operation, most likely for a few years of operation and first upgrades. Progressive transfer of well established responsibilities and duties to OP will certainly be a challenge.

MPE Structure



MPE Organisation

Secretariat and Administrative Assistance:
Pascale Baccheretti

DAO: **Georgina Hobgen**

HR Officer: **Lore Taillieu**
(In Bat. 30-6th floor on Tuesdays)

Pascale Baccheretti

- ❑ Organization of regular meetings, internal reviews, workshops and other special meetings,
- ❑ Installation of all newcomers,
- ❑ Organization of official travels,
- ❑ Administration of the INDICO and the EDMS structures for the group ,
- ❑ Administration of internal space/offices in collaboration with the appropriate services,
- ❑ Administration of informatics and GSM orders in collaboration with the appropriate services,
- ❑ Creation and maintenance of the MPE web pages, 'trombinoscope',
- ❑ Registration and follow-up of the 'habilitations électriques',
- ❑ Administration of the TE-MPE invoices,
- ❑ School fees and various reimbursements according to the rules,
- ❑ Administration of general orders/economat,
- ❑ Administration of biocells for the group,
- ❑ Administration of the MPE car pool.

MPE Organisation

Section MPE-CP – Circuit Protection

Section Leader: Knud Dahlerup-Petersen

- Responsibility for the protection of the superconducting magnet circuits in the LHC machine including design, construction, consolidation and exploitation. Responsibility for the machine energy extraction systems. Responsibility for the magnet protection and energy extraction systems in magnet test facilities including design, construction, consolidation and exploitation.

MPE Organisation

Section MPE-EI – Electrical Integrity

Section Leader: N. Catalan Lasheras

- Responsibility for the electrical quality assurance (ELQA) during magnet interconnections, hardware commissioning, electrical diagnostics and interventions during operation.
- Responsibility for the exploitation of magnet circuits including DFBs, DSLs and their auxiliary equipment.
- Responsibility for magnet circuit electrical integrity.
- Evaluation and monitoring of the evolution of the magnet circuit electrical integrity.

MPE Organisation

Section MPE-MI – Machine Interlocks

Section Leader: Bruno Puccio

- Responsibility for the interlock systems (**BIC, PIC & WIC**) and additional electronic systems (**FMCM, SMP**) for machine protection of the present and future CERN accelerators including design, construction, consolidation and exploitation.
- Responsibility for the interlock systems in magnet test facilities including design, construction, consolidation and exploitation.
- Responsibility for specific studies related to machine protection.

Beam **I**nterlock **C**ontrollers, **P**owering **I**nterlock **C**ontrollers, **W**arm magnet **I**nterlock **C**ontrollers
Fast **M**agnet current **C**hange **M**onitors, **S**afe **M**achine **P**arameters system

MPE Organisation

Section MPE-PE – Circuit Performance Evaluation

Section Leader: R. Schmidt

- ❑ Studies of protection issues for LHC superconducting magnet circuits.
- ❑ Monitoring of the evolution of the magnet circuit performance.
- ❑ Development of tools to understand circuit electrical and protection behaviour.
- ❑ Machine protection studies: Analyse coherence of MP systems across systems. Establish quench and damage levels due to beam loss. Study the reliability of the machine protection systems.
- ❑ Assist *commissioning of the powering system*, machine protection systems and provide support to operation with and without beam.
- ❑ Coordination of the studies for CLIC machine protection systems and other future accelerators.

MPE Sections

Ca. 50 Members (25 Staff Members)

Knud DAHLERUP-PETERSEN

Gert-Jan COELINGH

Reiner DENZ

Mathieu FAVRE

Noel FOURNIER

Vincent FROIDBISE

Joaquim MOURAO

Kevin PRIESTNALL

Fabio FORMENTI

Jens STECKERT

Robert Henry FLORA

Sandor FEHER

Zinur CHARIFOULLINE

Adam DROZD

Arkadiusz GORZAWSKI

Edward NOWAK

Grzegorz SEWERYN

Nuria CATALAN LASHERAS

Giorgio D'ANGELO

Richard MOMPO

New recruit

Fabienne BOISIER

Piotr JURKIEWICZ

Andrzej KOTARBA

Jaromir LUDWIN

Mateusz BEDNAREK

Marek TALAK

Olivier DESEBE

Bruno PUCCIO

Pierre DAHLEN

Jean-Louis VO-DUY

Markus ZERLAUTH

Benjamin TODD

Nikolai TROFIMOV

Iván ROMERA RAMIREZ

Alejandro CASTAÑEDA SERRA

Jean-Phillipe BOUDONNAT

Bruno MONTIER

Bertrand LAVAZAIS

Maciej KWIATKOWSKI

Rudiger SCHMIDT

Rob WOLF

Arjan VERWEIJ

Mike KORATZINOS

Michel JONKER

Kris KOSTRO

Juan BLANCO SANCHO

Jim Strait

CP –Circuit Protection
EI – Electrical Integrity
MI – Machine Interlocks
PE – Performance Evaluation

Knud DAHLERUP-PETERSEN
Nuria CATALAN LASHERAS
Bruno PUCCIO
Rudiger SCHMIDT

MPE - Special functions

- ❑ Hardware Commissioning Coordinator – Ruediger Schmidt
- ❑ MPE Safety Representative – Knud Dahlerup-Petersen
- ❑ MPP (MPS) co-chairs – Karl-Hubert Mess and Nuria Catalan Lasheras
- ❑ Shutdown activities coordinator – t.b.d.
- ❑ Software tools coordinator – Kris Kostro (BE-CO)

MPE - Communication and Meetings

- TE-MB: initially each Monday 10h00 -12h00 then alternate Mondays 10h00 -12h00
- MPE-SLM: alternate Mondays at 14h15
- Extended SLM (MPE-EM) for all engineers : once per month on Mondays at 14h15 followed by SLM if required
- Group meetings : each 2 months

MPE Group Meetings in 2009

January 2009						
Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February 2009						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2009						
Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009						
Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009						
Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009						
Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009						
Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Offices

Bt.30/3

MSC

MPE

Walckiers	fax print	Arpaia	
49		46	48
Schweg/03.09		Visiteurs	
Weckennann			
45			
Inglese/10.09			
Fiscarelli/10.09			
Montenero /02.09	ladanza/12.10	labo	401 402
39	Cardines/01.10/		36
37	Di Lucca	Sievers/EN	
	De Matteis	OSQAR Collaboration	34
	(Remondino)		
35	Berard	Wolf	74196
33	Dunkel		
	Miami/2011	Verweij	32
31	March/10.09	Jonker	30
	Apres MPE fellow		
29	Jurkiewicz	Ludwin	28
	Kotarba	Talak	
	Gornicki	Bednarek	
25			
	Nuria	Koratzinos	26
23		Strait	24
	1 PLACE	Bielert	22
	Blanco-Sancho	fibre optique	20
19	Student	Boisier	18
	D'Angelo		
17		MPE/New recru	16
15	Mompo	Vorozhtsov	14
	ELQA	Giloteaux	
13	Labo/MPE	Galbraith	12
	ELQA		
11	Labo/MPE	Buzio	8
	Labo/MSC	Garcia-Perez	73762
			4
3	Labo/MSC	Cote	78589
1		Afonso-Rod	78589
			2

Bt.30/5

MPE & ADM

Pr.2

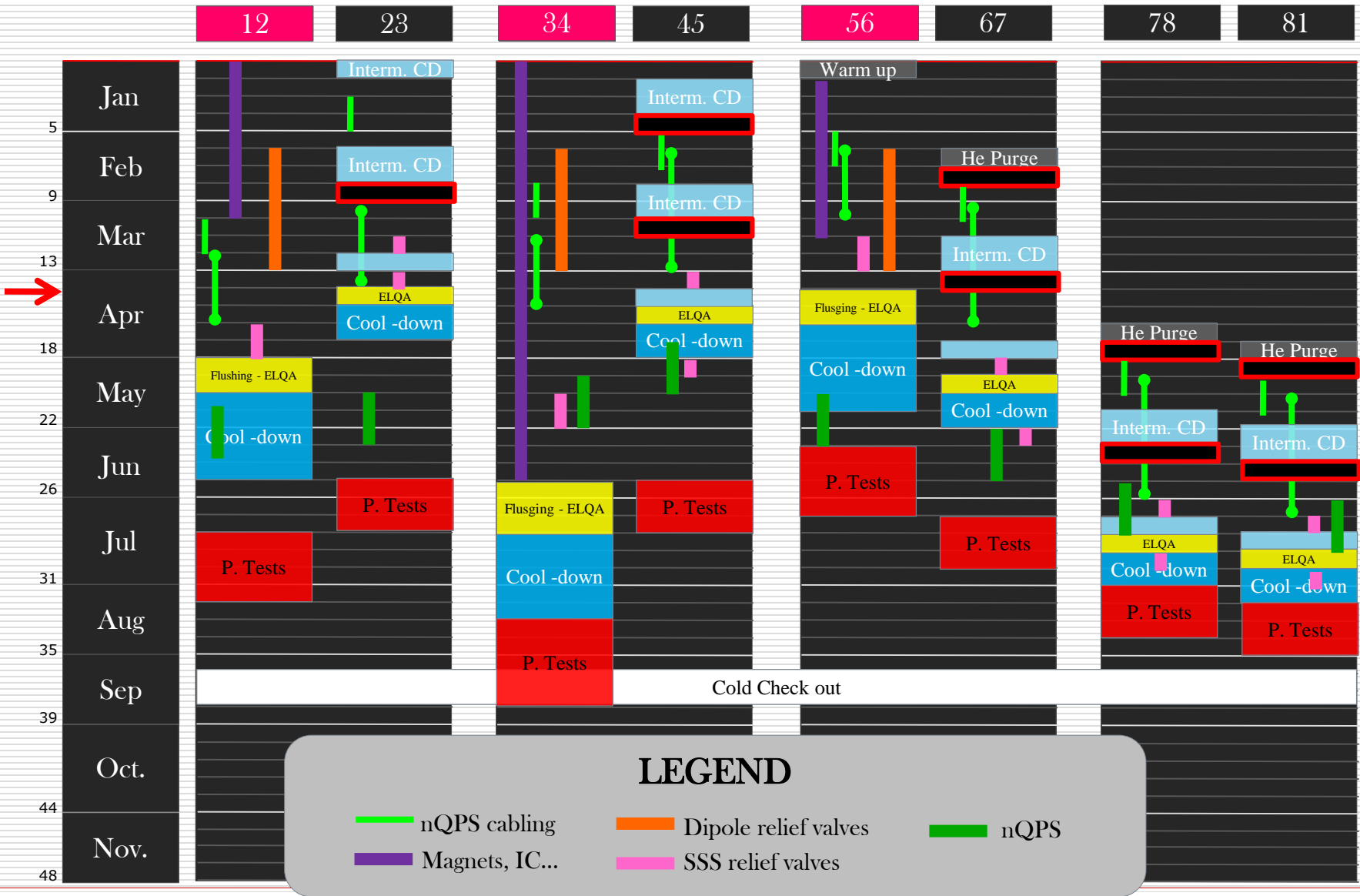
Labo	Labo	
75348	Fournier	45
43		48
73988	Froidbise	
73988	Mourao	
41	Favre	
	S.de.Reunion	
	Coelingh	
35		
	Steckert+1	
33		
	Charifoulline	
31	Droz	
	Flora	
	Feher	
29		
	Sewerin	
	Nowak	
25	Gorzawski	
	Priezniak	
23		205
	Schmidt	
17		
	Siemko	
15		
	Pascale	
13		
	Romera	
	Castenada	
	Kwiatkowski	
11		
	Amalia	
7		
	Boudonnat	
	Montier	
5	Lavazais	
	labo cablag	
1	bancs de tests	
	LABO MI	
	PIC+Wic	
	& labo Soft	40
	LABOMI WITH	
	VME CRATES	38
	Knud	
	Knud	
	Formenti	34
	Denz	73798
	Denz	28
	Puccio	
	Puccio	26
	Priesnall	22
	Dahlen	20
	Todd	18
		16
	Serveur	14
	Fax	
	Vo Duy	12
	Trofimov	10
	RESERVE	8
	Zerlauth	6
	Sandrine Lenaour	4

Knud
B.Puccio
L.Rossi

Main objectives and priorities for next 6 month

- ❑ To build and integrate the group
- ❑ QPS upgrade project
- ❑ Sector 3-4 repair
- ❑ Preparation for the HWC (re)start up

Tentative Schedule for 2009



Main objectives and priorities for next 6 month

- ❑ To build and integrate the group
- ❑ QPS upgrade project
- ❑ Sector 3-4 repair
- ❑ Preparation for the HWC (re)start up

YES WE CAN !!!