

CLIC rf structure

Supply the power, gradient and wakefield

W. Wuensch
CLIC meeting
27-4-2006

Activities

- **Theory**: concepts, computation, beam dynamics interface, designs, parameters, CLIC design, breakdown physics and prototypes of the high-frequency rf chain (PETS, waveguide components, accelerating structures).
- **Experiment**: establish, build and execute a high-power rf experimental program to understand physical limits to gradient, test technologies and demonstrate performances. Produce rf hardware, diagnostics, acquisition hardware and software etc. for test stands. Make specialized experiments: dc spark, laser fatigue and ultrasound. Collaborative experiments with SLAC (KEK?).
- **Technology**: fabrication, metallurgy, surface treatment and metrology for PETS, waveguide components and accelerating structures.
- **Stand-alone power sources**
- **Low-frequency CLIC**: MBK, pulse compression
- **Computation**: Central electromagnetic computational expertise for CERN, computation and training for the LHC
- **Collaborations**: HIP and Finnish Industrial network, CIEMAT, Uppsala, Turkey, SLAC, US High gradient collaboration, KEK, Dubna.

People

Claude Achard: Mechanical design, fabrication coordination and installation of the rf components and test areas. Interface to many services such as central workshop, support staff, cleaning, welding etc. Must deal with crazy ideas of many of the people who follow. Brazing artist.



Samuli Heikkinen: PhD student, thesis on fatigue. Ultrasonic fatigue experiment. 3-d fabrication modeling support. Industrial contact man (often Finnish!).



Alberto Rodriguez: high power testing and rf breakdown experiments, test stand hardware and software. Endless hours in the control room...



Raquel Fandos: rf measurements and associated HFSS simulations, rf electronics system for test stand and high speed data acquisition system. Calibration!



Igor Syrychev: CLIC and experimental PETS and waveguide systems.
Pulse compression. HEMBA. Too many CLIC ideas and parameters.



Frank Perret: machining and assembly



Alexej Grudiev: CLIC and test accelerating structures. Waveguide components. Beam dynamics interface, parametric optimization.



Alexej Dubrovskij: rf conditioning software. Mathematician in a world of accelerators.



Steffen Döbert: high power testing and rf breakdown experiments, CTF3 interface, X-band testing



Jonathan Sladen (on right): rf diagnostics for test stand and high speed data acquisition system



Mauro Taborelli: TS/MME coordination, surface physics, materials, machining, metrology



Erk Jensen: Stand-alone power source, electromagnetic computation especially at level of CERN installations, HFSS/ANSYS. 3 GHz pulsed surface heating cavity.



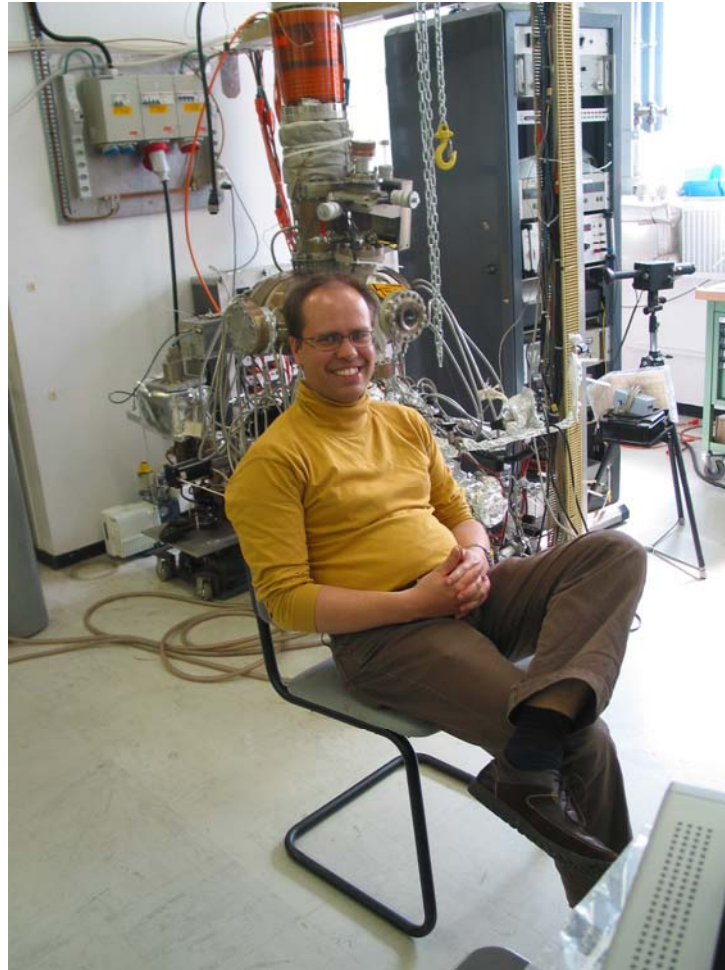
Sergio Calatroni: dc spark and laser pulsed surface heating experiments.
Surface physics and materials



Gonzalo Arnau-Izquierdo: Materials and metallurgy. Bimetals. Surface analysis.



Trond Ramsvik: Mr. dc spark



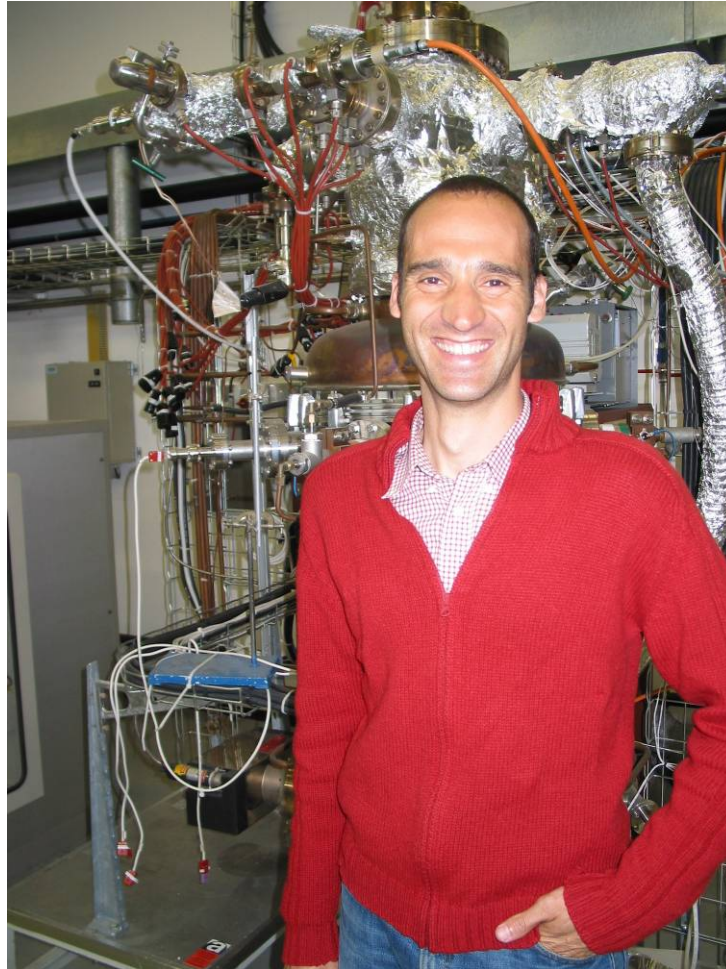
Holger Neupert: laser fatigue experiment



Steffano Sgoba: Metallurgy and material processing



Pedro Costa Pinto: vacuum calculations



Jukka Paro: Visitor from HIP/Finnish Industrial network, high-precision 3-d machining



Öznur Mete: Visitor from Turkey. CTF3 operation and rf conditioning



Zafer Nergiz: Visitor from Turkey. CTF3 operation and rf conditioning



David Manuel Carrillo Barrera: visitor from Ciemat. PETS computation and now also rf conditioning (sorry Igor)



Module working group

Alexej Grudiev

Bertrand Nicquevert

Carlo Wyss

Daniel Schulte

Helene Mainaud Durand

Igor Syrahev

Jean-Michele Lecroix

Mauro Taborelli

Noel Hilleret

Paulo Chiggiato

Pedro Costa Pinto

Rafael Leluxe

Walter Wuensch

Other activities



<http://hg2006.web.cern.ch/HG2006/>

CLIC linear trek, 9-2005



CLIC ski day, 3-2006

