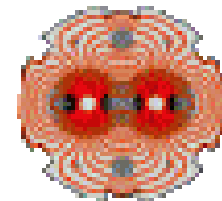


# HIGHLIGHTS OF LAST MONTHS OF HSS ACTIVITIES

ALWAYS AN EXCITING PERIOD

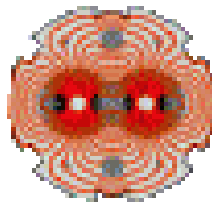


# LHC: ready for restart!

- Analysis of magnet non-conformities (LS1 activities)
- Analysis of Run I data
- Improved tools and techniques for beam commissioning
- Development of on-line model
- Contribution to commissioning scenarios (with HSC)
- Preparation of optics for Run II

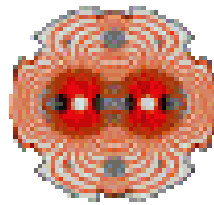
**Protons  
and ions**

# SPS: still no need for action...



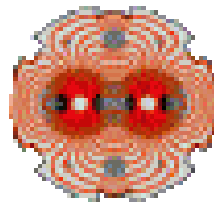
- No activities to mention, apart for contribution (aperture analysis) for proposed e-cloud monitor in quadrupole (with HSC).

# PS: already up and running...



- Contribution to overall beam commissioning activities (with HSC).
- Commissioning dummy septum (installed during LS1)
  - All fast extraction schemes reviewed and successfully re-commissioned. Awaiting an official OP statement.
- MTE commissioning:
  - Beam splitting resumed.
  - Currently, activities are stopped due to:
    - Failure of extraction kickers -> 3 weeks of down time
    - Failure of wire scanners (2 out of 3 in H-plane)

# Projects/studies: business as usual...



## ■ Collimation

- New collimators with buttons successfully installed.
- Crystals installed in IR7 for MD studies.

## ■ HL-LHC

### ■ WP2 (beam dynamics)

#### ■ Optics studies:

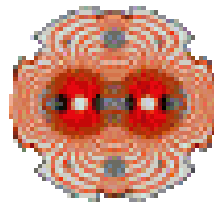
- New layout just released (HLLHCV1.1)
- Advanced concepts

#### ■ Tracking studies:

- Field quality of new magnets analysed and target error tables available
- Next steps: inclusion of fringe fields effect and field quality of crab cavities. Ripple in power converters.

**Now:  
contribution  
to the  
Preliminary  
Design  
Report**

# Projects/studies: business as usual...

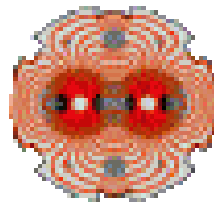


## ■ HL-LHC

- WP5 (collimation)
  - Collimation performance with HL-LHC layout
  - New collimation baseline in IR7 and IR1/2/5
    - Finalised layout with cryo collimators and 11 T dipoles
    - New materials for reduced impedance
    - Advanced concepts for halo control (e-lens; other methods to be tested in MD studies in 2015)
- WP8 (machine detector interface)
  - Analysis of failure scenarios relevant for experimental insertions

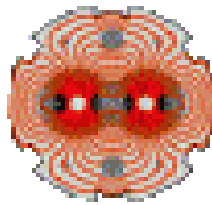
**Now:  
contribution  
to the  
Preliminary  
Design  
Report**

# Projects/studies: business as usual...



- HL-LHC
  - Ions
    - Improvement of overall performance (e.g., stochastic cooling)
- PS-LIU
  - Coordination of activities
  - Studies of resonance compensation in the PS (**other activities in HSC**)
- FCC
  - Project co-ordination and activities in the domain of FCC-hh (collimation, machine detector interface, ions) (**other activities in LAT**)

# Computing: an ever increasing activity...



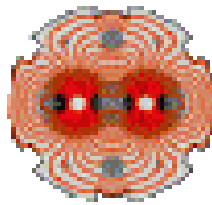
- MAD-X
  - Service to the users (bug fixing and general support, including documentation)
  - Refurbishment of code
  - New physics or improved models(required for new projects/studies)

**Contributors  
are welcome!**

- New MAD
  - Some components available
  - Some design choices under discussion



# Computing: an ever increasing activity...



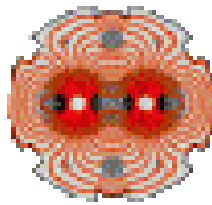
**Google summer student programme provided efficient help!**

## ■ SixTrack

- Service to the users (bug fixing and general support, including documentation)
- New physics or improved models (required for new projects/studies) (**also with HSC**)
- Incorporation of features of general interest developed by users for private versions
- Harmonisation of collimation version of SixTrack and standard version

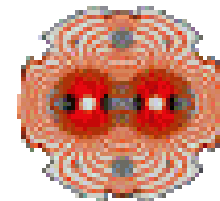
**Contributors are welcome!**

# Computing: an ever increasing activity...



- SixDesk (tracking and analysis environment)
  - Detailed analysis and review of current implementation and needs
  - New version of tools for tracking data analysis

**Contributors  
are welcome!**



# **A BIG THANK YOU FOR THE HELP DURING TRANSITION FROM LCU TO HSS AND CONGRATULATIONS FOR THE RESULTS ACHIEVED!**

**Roderik BRUCE, Helmut BURKHARDT, Riccardo DE MARIA, Laurent DENIAU, Stephane FARTOUKH, Miriam FITTERER, Hans Mattias FJELLSTROM, Simone GILARDONI, Pascal HERMES, Cédric HERNALSTEENS, Simon HIRLAENDER, John JOWETT, Andy LANGNER, Andrea LATINA, Ewen MACLEAN, Aurelien MARSILI, Meghan MCATEER, Eric MCINTOSH, Daniele MIRARCHI, Edward NISSEN, Tobias PERSSON, Elena QUARANTA, Stefano REDAELLI, Thys RISSELADA, Adriana ROSSI, Roberto ROSSI, Ghislain ROY, Belen SALVACHUA FERRANDO, Andrea SANTAMARIA, Michaela SCHAUMANN, Piotr SKOWRONSKI, Rogelio TOMÁS, Ciprian TOMOIAGA, Gianluca VALENTINO, Alessandra VALLONI, Xavier VALLS PLA, Raymond WASEF, Frank ZIMMERMANN.**