

2005 Activity Report For The First Year of Ph.D.

Özgür Çobanoğlu

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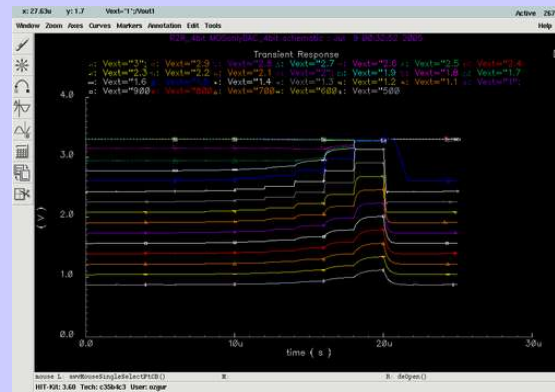
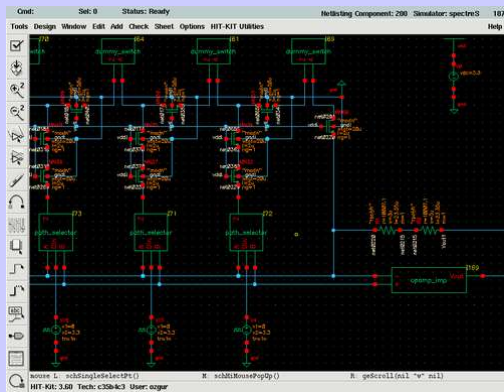
VLSI Laboratory, old building, first floor

14 October 2005

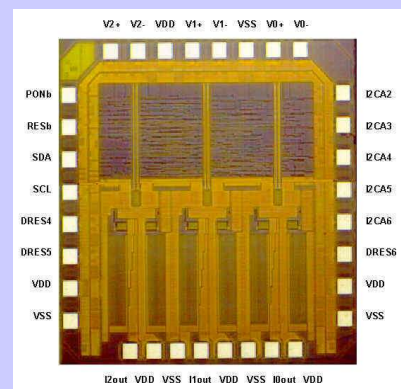
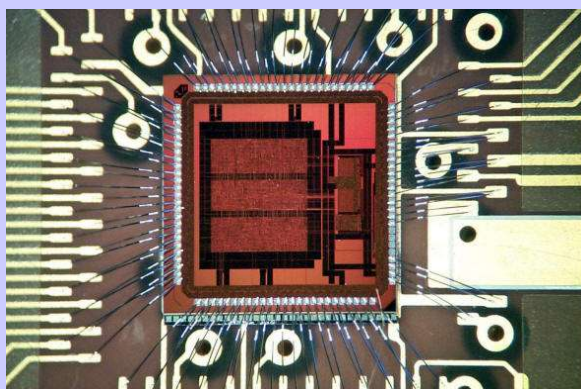
Turin/Italy

Activity in “VLSI Design” which is my PhD Subject

- ◆ Design and simulation of R-2R MOST-Only DAC and all the related components for one of the chips of CERN-COMPASS experiment from scratch in **AMS 350nm** technology. Related documents of the detailed architecture could be reached through the following links within my home page (pictures below briefly illustrate the architecture and simulation respectively) :
 - ◆ <http://www.ph.unito.it/~cobanogl/lowlevelstuff/shortReports/1/>
 - ◆ <http://www.ph.unito.it/~cobanogl/lowlevelstuff/shortReports/1/EarlyStageActivityReport.html>



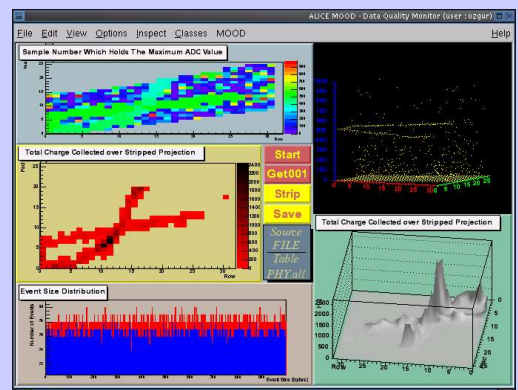
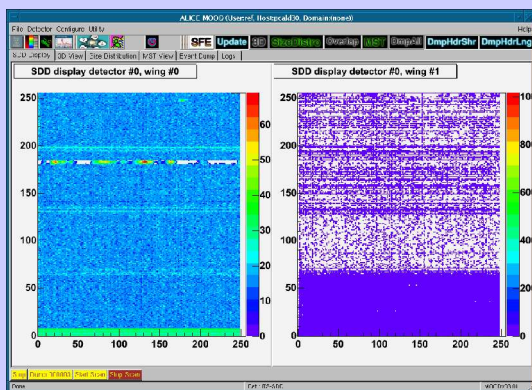
- ◆ Currently, I am working on a part (current mode DACs) of Linear Laser Driver (LLD) for CERN-LHC. What I do is to re-produce the previous design (**IBM 250nm** technology) to understand/investigate the shortcomings and re-design a similar functionality in **IBM 130nm** technology, which is a quite different technology, solving the previous handicaps/requirement-changes. Related official web pages are as follows (pictures below show the GOL die and old LLD layout respectively) :
 - ◆ <http://proj-gol.web.cern.ch/proj-gol/>
 - ◆ <http://proj-gol.web.cern.ch/proj-gol/>
 - ◆ <http://proj-lld.web.cern.ch/proj-lld/>



Presentation, Publication, Conference @ 2005

- ◆ MOOD - “Monitor Of On-line Data & Detector Debugger” oral presentation, I gave @ 14th IEEE-NPSS Real Time Conference 2005, held at the Alba Nova University Center in Stockholm, Sweden, 4-10 June 2005. Related web page and my presentation could be acquired through (Pictures show ITS-SDD and TPC modules displaying events of each detector test setup respectively) :

- ◆ <http://www.sysf.physto.se/RT2005/>
- ◆ http://www.ph.unito.it/~cobanogl/MOOD_realTime05_presentation.pdf



- ◆ CERN-ALICE-DATE (DAQ and Test Environment) Users Manuel V5, I wrote the section on an on-line monitoring client application - MOOD, developed and maintained by myself. Related ALICE-DAQ web page is as follows :

- ◆ <http://ph-dep-aid.web.cern.ch/ph-dep-aid/>

- ◆ Subatech, International Workshop on Computing for High Energy Physics, Nantes/France, 2005, related web page is as follows :

- ◆ http://www-subatech.in2p3.fr/DimuonNet_2005/Portail.htm



Courses & Schools I attended

- ◆ CERN School of Computing 2005, 4-17 September, St. Malo/France, I collected **50 credits** in total with the final examination. Below links point the official school web page, program, and lectures (also the examination results can be reached) :
 - ◆ <http://csc.web.cern.ch/CSC/>
 - ◆ http://csc.web.cern.ch/CSC/2005/This_year_school/Programme/Programme_overview.asp
 - ◆ http://csc.web.cern.ch/CSC/2005/This_year_school/CSC-Recordings/Video-Index.asp

- ◆ IEEE-SPSS Real Time Conference, Two Courses, **6 hours** in total (Web Page : http://www.sysf.physto.se/RT2005/html/courses_talks.html) :
 - ◆ *Gigabit Networking for Data Acquisition Systems - A practical introduction*
 - ◆ *System On Programmable Chip - A design tutorial*

- ◆ XV Giornate di Studio sui Rivelatori 2005, Villa Gualino, **16 hours** in total (Web Page : <http://www.gsr.unito.it/>)

- ◆ (L.Ramello), Data Analysis Course, **20 hours** in total (Web Page : <http://www.to.infn.it/~ramello/dottorato/fs3-01new.htm>)

- ◆ (A. Rivetti), Microelectronics Course, **6 credits** in total, web pages for homework and related code :
 - ◆ <http://www.ph.unito.it/~cobanogl/lowlevelstuff/microElectronicsHomework/>
 - ◆ <http://www.ph.unito.it/~cobanogl/lowlevelstuff/microElectronicsHomework/calculate.html>

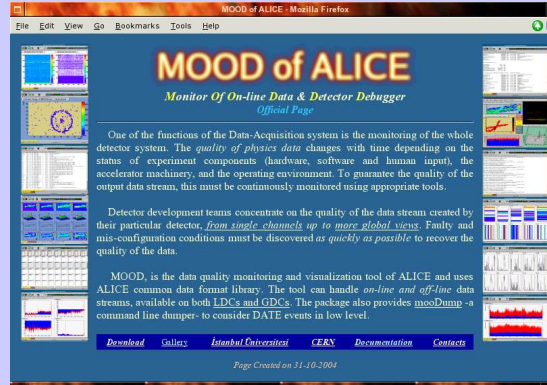
- ◆ (M.Gallio, G.Navarra), Data Acquisition Techniques - RPC Experiment group, **18 hours** in total, web pages for laboratory report and the software I developed for off-line analysis :
 - ◆ http://www.ph.unito.it/~cobanogl/RPC_05_Ozгур_Cobanoglu.swf
 - ◆ http://www.ph.unito.it/~cobanogl/MoniTorino/doc/USER_Index.html

- ◆ (P.G.Innocenti), DAQ-TRG, Course, **12 hours** in total, web pages for the lecture overview and homework :
 - ◆ <http://www.ph.unito.it/dottorato/corso%20innocenti.htm>
 - ◆ http://www.ph.unito.it/~cobanogl/TRG_05_ozgur_cobanoglu.swf

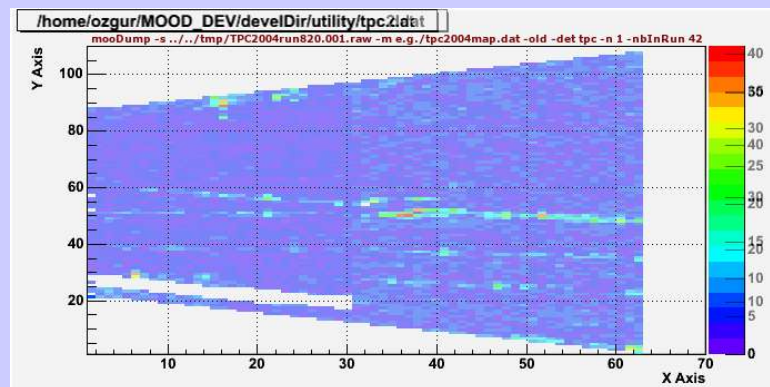
*Concluding that I collected **128 hours/credits** of lectures during the year 2005 which was the first period of my PhD activity.*

Software I Developed and Maintained

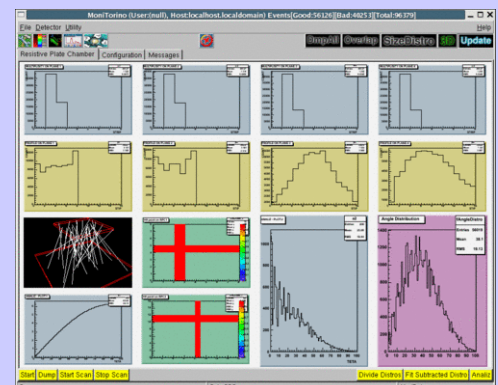
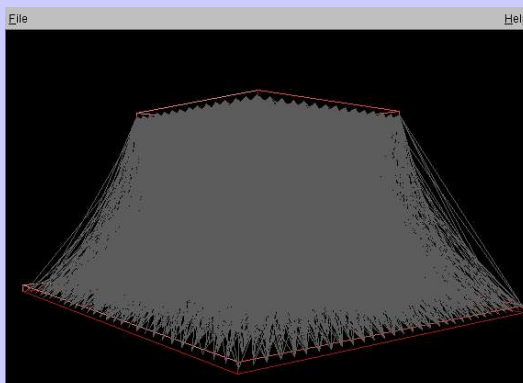
- ◆ MOOD, Monitor Of On-line Data for CERN-ALICE, web page :
 - ◆ <http://ph-dep-aid.web.cern.ch/ph-dep-aid/MOOD/>



- ◆ mooDump, independent command-line utility within MOOD package for CERN-ALICE
 - ◆ <http://ph-dep-aid.web.cern.ch/ph-dep-aid/MOOD/Documentation/mooDump.html>



- ◆ MoniTorino, developed for an educational RPC experiment in Turin University
 - ◆ http://www.ph.unito.it/~cobanogl/MoniTorino/doc/USER_Index.html



To keep track of my PhD Studies

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and

Web Pages I maintain

<http://www.ph.unito.it/~cobanogl>
<http://www.cern.ch/Ozgur.Cobanoglu>

could be used.
