Leb2001 - Highlights

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Menu

- LHC status: short of slides…
- Electronics Tutorials: very good teacher
- Close to us:
  - FPGA evolution,revolution and convolution
  - Modern board : rework, JTAG strategy,etc…
  - HCAL trigger
- SEU With FPGA
- Quality Assurance
- Hera-B Experiences
- Power supply: short of slides
- LeB01 debat

Trends and Challenges in High Speed Microprocessors

- Kerry Bernstein: IBM
- Scaling(reduce electrical/physical parameters by constant value)=optimization in speed and size…
- Problems now:
    - Critical parameter tolerance harder to maintain: performance sacrificed to maintain yield
    - Performance very sensitive with oC and supply
    - Sensitive to particles (cosmics ray,a,…)
    - Tunneling current: breakdown
- Change in design to cope with:
    - Interesting formula:time=Instr/pgm x cycles/Instr x Seconds/cycle
    - Complain about compiler doesn't follow effort of designer!

Close to us

- Pete Alfke from Xilinx: review evolution FPGA
- Modern Board design: Joel Bovier (CES) : BGA reworked, JTAG testing,…
- HCAL trigger CMS: modular board
- Our talks:
  - ROD with too much Slink?
  - Glink future?

SEU in (and?) FPGA

- Antifuse FPGA: redundancy architecture
- Radiation test and application of FPGAs in the ATLAS Lvl1 Trigger:
  - simple design to detect SEU either in FPGA or Flashprom
  - Test of SEU inside FPGA only

Other talks

- Quality Assurance for CMS tracker Optical Links
- Hera-B experiences

Conclusion: points from the discussion on last day

- Do we know all the system problems?
- How to improve our design and take into account progress?
- Are we ready for production?
- How to keep working team over such a long period?