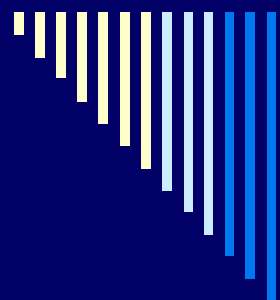




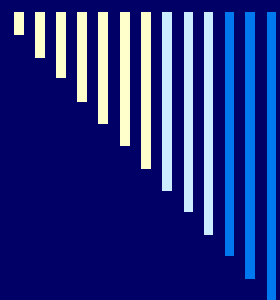
SELSE II Reverie

- Poster Session: Dave Heidel & Dean Liberty
 - Observations of the poster chairpersons were shared, and several of the poster presenters still remained at the wrap-up to give “one minute elevator points” on their presentations
 - SELSE II Co-Chair comments
 - The following two pages of key observations were presented at the wrap-up and they were edited and finally agreed upon to represent the collective outcome of SELSE II
-



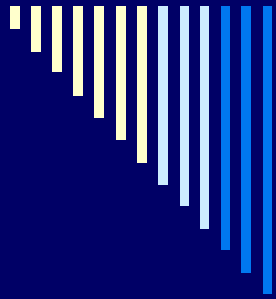
SELSE II Reverie

- Soft error is a concern (we are all here)
- Multi-bit errors can not be ignored
- Latch sensitivities are approaching SRAM
 - 0.001 FIT/flip flop is representative of a sensitive flip flop design in bulk technology
 - 0.5 fC to upset the most aggressive latches (alphas can produce this at 30nm range)
- SOI is 4 to 8 X improvement over bulk (some projections are more pessimistic 2 – 3X, see Sept 2005TDMR)
- We observe the trend to control alpha emissions so alpha contribution is low compared to cosmic
 - Some companies set the bar at 0.0002 alphas/cm²/hr
- Is important to consider protecting all SRAM arrays and register files
- At the system level, we heard the lesson to “set your targets”: not just uncorrectable errors but SDC



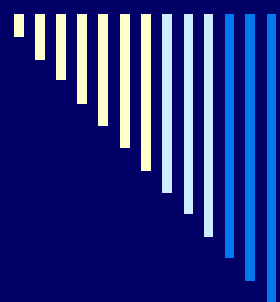
SELSE II Reverie (cont')

- We saw how 3 companies are doing accelerated measurements at system level
 - Measurement of logic derating is still elusive
 - Low cost (power & area & performance) is essential: 10% chip area increase is a reasonable target for many applications
 - Corollary: It is not practical to protect everything (for most applications)
 - We saw good progress on methods to tell us how to design for low cost mitigation
 - Will we have tools in the future?
 - Mitigation techniques should address other failure modes (hard, intermittent, etc.) too
 - We saw some ways for programs to be SER-resilient
 - We should revisit reliability metrics (beyond MTTF)
-



Post Workshop Feedback

- “this was the best workshop I have ever attended”
- “keep it just the way it is ... single track, no formal proceedings, highly interactive, ...”
- “I wish I got more critique during my talk from the industrial people on how to improve my research”
- “we are finally getting scenario numbers researchers can use”
- “I especially liked the poster sessions. It presented an opportunity to have in-depth conversations on papers I wanted to focus on.”
- “SELSE II was a valuable use of the past two days”



Looking Forward

- We will continue the SELSE tradition in 2007 with SELSE III

- THANK YOU!!

From the whole SELSE II organizing committee

Thank You University of Illinois Volunteers!
