Summary
A Systematic Methodology to Compute the Architectural Vulnerability Factors for a High-Performance Microprocessor

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April 4, 2005

1 To be completed before class

What are the problems solved by this paper? (50 words)
Single-event upsets due to external particles are becoming an important problem in the future processor design. Techniques to handle these upsets are possible but they usually carry a huge overhead. An architect need to know what is the error rate of each of the hardware structures so that the design effort can be concentrated on these structures. But there is a need for a better estimate of the error rates.

What are the approaches attempted by this paper? (50 words)
This paper tries to get a tighter bound on the error rate. AVF - the architectural vulnerability factor is defined as the probability that the error occurring in a structure will result in actual error. Not all errors create wrong results, like error in the wrong path execution etc. In this paper, all such factors are taken into account and a tighter bound on the error rates for each hardware structure is got.

What are the main conclusions of this paper? (50 words)
For the spec 2000 benchmarks it is found that the ACF ranges between 14% and 40% and the AVF for the execution units range between 2% and 17%. These estimates at the design exploration phase can help the architect to better understand the requirements of the design.

2 To be completed after class

Did this paper address an important issue? Explain. (100 words)

Are the proposed approaches valid? Describe its strength and weakness. (100 words)

Do the results support the conclusions? Explain. (100 words)

Describe the potential future works? (100 words)