

What I can do
with what I know about
Fault Representativeness

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Faults used for benchmarking should be

representative

of what happens in **production use**

About what types of faults do I know enough to use them for benchmarking ?

- Hardware faults - yes, partially
- Software faults - yes, partially
- Environmental faults - yes, partially
- Upgrade faults - no
- Operation faults - no

Hardware

- Affect all functional units
- Mostly single bit flips
- Transients
- Permanent faults where possible

weighted by the silicon area
and duty cycle and ...

Software

- The most representative bugs are those remaining in the code to be benchmarked - heavy tests!
 - inc. Ballista/Mafalda like.
 - the state of practice of testing seems to be quite bad
- Simple injected software faults
 - If software is not tolerant to software bugs, it should be.

Environment

- Unplug one module at a time
- Unplug cables one at a time
- . . .

- Those fault sets will

significantly

improve the state of the practice

for instance in e-business/transactional
applications