THE INSANITY OF DRC RULES AND DFM AT 10NM AND BELOW

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Number of Design Rules

- Overblown
- Administration of 10,000’s rules is trivial
- Check parallelizes reasonably well, memory size has kept pace
Design Rule Complexity

- Rules becoming less local, patterns
- Graphical / formal descriptions enhance clarity
- Ability to run a check of these descriptions is critical to develop a rule
- Executable spec, “check before deck” => instant feedback

Design rule:
“Using the full layer stack, for all nets that are not connected to a diffusion, the ratio of (sum of area of met3) divided by (sum of area of gate) must be <= 200”
Trading Design Rule Complexity

Designer draws single layer
Rule:
“For adjacent horizontal wires, overlap of line-ends with length>=0.3u must be >=0.2u, or spacing must be at least 0.2u “

Designer draws two layers
Rule:
“Spacing between line-end cuts must be >=0.2u“