

عنوان مقاله:

Mitigating Crosstalk Effect by Considering Coefficient of Tracks Inductance

محل انتشار:

سومین کنفرانس سراسری نوآوری های اخیر در مهندسی برق و کامپیوتر (سال: 1395)

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خلاصه مقاله:

Crosstalk fault occurs due to coupling and inductance effects forming between long, parallel and adjacent wires of NoCs. Crosstalk fault is transition dependent fault that the severity of this fault depends on the transitions of data appearing on wires. With appearing these transitions, crosstalk faults increase linearly with coupling capacitance while logarithmically with inductance coupling between wires. In most of crosstalk talking mechanisms, only the coupling considers capacitance between wires is considered and the inductance effects are ignored. However with increasing the frequency and marching the chips to the Giga Hertz domain, the effects of the inductance cannot be ignored. This paper intends to inspect the effect of the inductance on the crosstalk faults and increase the effects of TODs on the wires. We have shown that 4C class of crosstalk is mitigated by the effect of inductance in nano-scale chip fabrication. Also we have showed new classes can become more serious by increase of inductance effect in new technologies.

کلمات کلیدی:

Crosstalk Faults, Inductance, Capacitance, Network on Chips, Reliability

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