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Accurate Prediction of Crosstalk for RC Interconnects

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Abstract: This work proposes an accurate crosstalk noise estimation method in the presence of multiple RC lines for use in design automation tools. The method correctly models the loading effects of non switching aggressors and aggressor tree branches using resistive shielding effect and realistic exponential input waveform. Noise peak and width expressions derived show very good results in comparison to HSPICE results. Results show that average error for noise peak is 4.1% and for the width is 6.8% while allowing for very fast analysis.

Key Words: Coupling noise, Interconnects, Layout Verification, VLSI circuits

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