

Study of boundary condition of device simulator  
for tiny circuit element analysis

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ABSTRACT

An efficient algorithm for realizing tiny circuit element analysis by using conventional device simulator has been developed. Constant current supply, attached resistance R and/or capacitance C can be handled without changing the shape of sparse matrix. The CPU time for simulation with additional C and/or R is about 1.3 to 1.5 times larger than without additional elements. The switching operation of 2-stage E-R type inverter can be analyzed by adding inner Neumann boundary conditions between two driver MOSFETs.

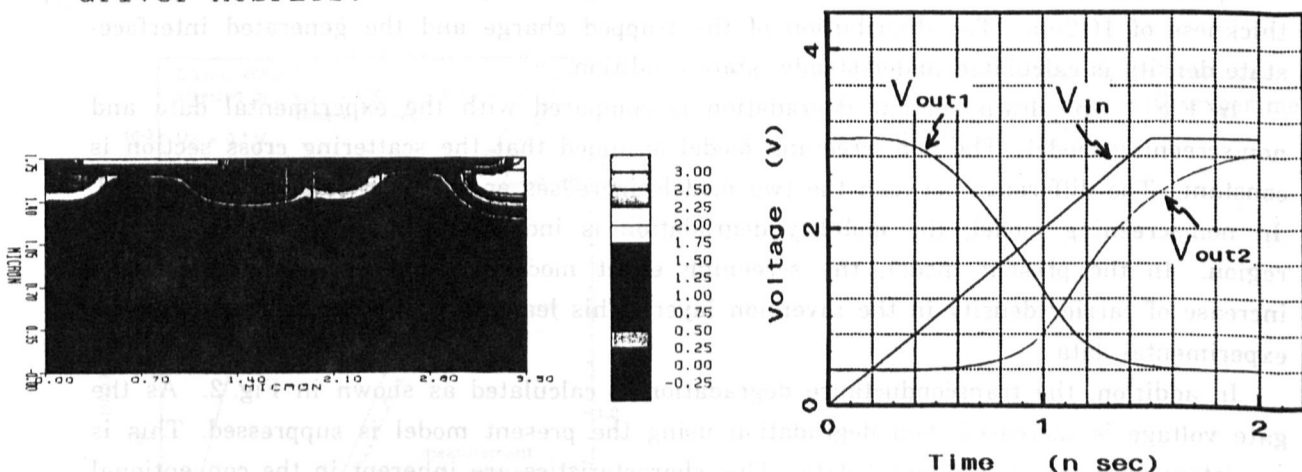


Fig.1 Potential distribution of 2-stage inverter (left) and their terminal currents as a function of time (right).