

Accurate table model of IC components for analog IC simulation

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The properties of spline-interpolation application in the course of component models realization (for example on MOSFET model) were observed in the article. Standard methods of local spline interpolation are not suitable for getting values of table functions and their derivatives between table nodes. It is important to obtain the accurate value not only for the function, but also for its first derivatives, which can not be reached by the traditional method of spline-coefficient obtaining.

A new notation of quadratic three-dimensional spline and new equations system for its coefficients calculating was proposed. A new equations system allows calculating coefficients analytically without usage of numerical methods resulting in some errors. The usage of proposed interpolation conditions allows to obtain the accuracy acceptable for analog circuit schematic modeling tasks.