STUDENT SECTION

Approximation of Current-Voltage Curve from Experimental Data, Using Bezier Functions

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Abstract– In this paper it is analyzed a method for presentation of current – voltage curve, when it is nown only experimental data, for example: a specified input - measured output. We started from classical method of estimation for a trace (the method of least squares) and we implemented a method for recursive computed of trend of input – output curve. By using linear interpolation, the overall trend might be compromised. A better solution is to use a cubic interpolation, but this method implies complex calculus and either it increases the time between the moment of measurement and the moment of display, or it requires more expensive equipment (like faster computers, better acquisition boards, and so on). The Bezier method is a good method for interpolation that uses less calculus than the cubic interpolation, but is more appropriate than linear interpolation. This method is also used in computer graphics for displaying complex surfaces in games, animations or simulations of different processes from physics, chemistry, electronics and mechanics. The final goal of this research is to use this method, in real time, for a general image about how does the analyzed device works. Even if there are some errors in the measurement process, they are overcome by the method, because there are used all the data points once, and the percent of bad data is smaller.