Abstract

This report documents the design and implemention of a tool for the investigation and visualisation of mathematical models (in particular, those of the engineering field), using the example of Surface Acoustic Wave filters as context. Object-oriented design in concert with C++ implementation enables the developed system to achieve these aims. Key features are: complex number modelling, true-algebraic expression parsing, cross-referencing variable and equation evaluation, the provision for multiple disjoint equation sets, database management for multiple associative data tables, input data sets, and input/output data mappings, and rectangular and vector graphing of table data. The system is developed using Metrowerks Codewarrior 9 integrated development environment on Mac OS platform, running on the PowerPC 601 architecture. The code is built to strict ANSI C++ standards so porting to another platform would be straight forward.