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Teaching Frequency Modulation to Undergraduate Electrical and Electronics Engineering Students Using MATLAB/SIMULINK

Mohamed S. M. R. Qader, M. R. Qader
[1,2]*College of Engineering, Department of Electrical and Electronics, University of Bahrain, Bahrain*

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Abstract

Teaching scientific concepts to undergraduate students is quite difficult sometimes especially when lots of mathematical terms are involved in the teaching process. Frequency modulation is one of these concepts. With the aid of MATLAB/SIMULINK toolbox it becomes much easier to realize this concept (FM Modulation) whether in time domain or in frequency domain. In doing so, the students will grasp the concept of Frequency Modulation faster and easier. The present paper tackles the task of explaining the FM modulation concept in a simple and straightforward way. That is done by using MATLAB/SIMULINK tool box in both possible domains: time domain and frequency domain. The simulation results obtained by such simple system is validated by a counterpart experimental investigation. Quite satisfactory agreements are reached when comparing the simulation results with that of practical counterpart.

Keyword: Education, Engineering, frequency Modulation, MATLAB/SIMULINK