Synthesis

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1 Abstract

Here goes the abstract

2 Introduction

Musical instruments have been part of human culture and craft since prehistory, playing a part in both written and verbal art, ceremony and celebration [1]. This report describes an attempted recreation using digital synthesis of two acoustic musical instruments from the western European musical tradition: A Mandolin and a flute. Acoustic musical instruments use an excited physical component to generate waves which are manipulated and shaped by the body or construction of the musical instrument. The generation of these waves, and their manipulation by the body of the musical instrument can be modelled using a series of oscillators, filters and modulators. Audio synthesis using analog circuitry was explored as soon as simple oscillators were readily available. Leading to instruments such as the theremin. In the 1970s, FM synthesis was beginning to take form as a method of musical instrument emulation. Chowning's work outlined specific FM techniques for the emulation of various instruments [2].

3 Theory

4 Methodology

5 Discussion

6 Conclusions

7 Appendix

7.1 Code

References

[1] L. Rault, *Musical Instruments, Craftmanship and traditions from Prehistory to the Present*. Harry N. Abrams, 2000. [Online]. Available: https://hal.archives-ouvertes.fr/hal-02072647

[2] J. M. Chowning, "The synthesis of complex audio spectra by means of frequency modulation," *Journal of the audio engineering society*, vol. 21, no. 7, pp. 526–534, 1973.