Hamilton Institute

Advances in non-linear distortion methods of synthesis and processing of musical signals

Victor Lazzarini
NUIM

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Abstract:
Non-linear distortion methods form a set of elegant and computationally economic methods of synthesis and processing for musical applications. Among these, we find the famous Frequency Modulation synthesis, as developed by Chowning and made popular by Yamaha. In addition, various other techniques, including Discrete Summation Formulae, Waveshaping and Phase distortion, can be cast in the same group (and often be given alternative interpretations) of non-linear distortion methods. Research in the area has been very limited since the mid nineties, until a recent series of developments spurred new interest in these ideas. In this talk, I will first introduce briefly the principles of non-linear distortion, providing an overview of the area. I will then follow this with a tour of recent work, which will include adaptive methods, virtual analogue models and analysis-synthesis applications.

Bio:
Victor Lazzarini is a senior lecturer at NUIM. A graduate of University of Campinas (UNICAMP, Brazil), where he obtained his BMus, he completed his doctorate at the University of Nottingham, UK. After a short post-doctoral position in Brazil, he was appointed at NUI Maynooth, where he established the Music Technology Laboratory in the Department of Music and the Sound and Digital Music Research Group. He has published widely in the area of computer music and digital signal processing for musical applications and his most recent major work is *The Audio Programming Book* (MIT Press, 2010), with R. Boulanger.

Venue: Seminar Room, Hamilton Institute, Science Building, NUI Maynooth

Time: 2.00pm - 3.00pm (followed by tea/coffee)

Travel directions are available at www.hamilton.ie

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