

Tutorial 5 - Practical Ambisonics

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Abstract

Ambisonics, with its channel based, speaker agnostic approach to surround sound encoding and decoding, has always been problematic to use in speaker layout obsessed Digital Audio Workstations. This session will explain what Ambisonics is and demonstrate how to set up and use the [WigWare Ambisonic Plug-in Suite](#) with the hierarchical routing structure presented by [Reaper](#) paying particular attention to the differences between first and higher order Ambisonics, and the lesser used near field compensation and distance filters. Example mixes created by 2nd year undergraduate students at the [University of Derby](#) will also be presented, along with newly developed teaching aids and visualisations that are soon to be released as open educational material for the dissemination of Ambisonics to an audience new to the subject.

Bio

Dr Bruce Wiggins graduated with a 1st class honours in Music Technology and Audio System Design from the University of Derby in 1999. His interest in audio signal processing spurred him to continue at Derby completing his Ph.D. entitled "An Investigation into the Real-time Manipulation and Control of 3D Sound Fields" in 2004 where he solved the problem of generating Ambisonic decoders for irregular speaker arrays and also carried out work on binaural/transaural reproduction systems.

He is now a lecturer in the Electronics and Sound subject group at the University where he teaches electronics, audio programming and digital signal processing which are all fed from his continuing research interests in Ambisonic surround sound systems earning him excellence awards for his promising research in 2005/6, his application of technology in 2006/7 and excellence in learning, teaching and assessment in 2007/8.