ACOUSTICS2008/1257
Soundscape source extraction using wavelet-based sparse representations

Oliver Bunting and David Chesmore

University of York, Department of Electronics, Heslington, YO10 5DD York, UK

As part of the EPSRC Instrument for Soundscape Recognition, Identification and Evaluation (ISRIE) project, the work described here aims to extract sources from a soundscape, with the aim of improving the signal to interference ratio to aid automatic identification and classification.

The paper will describe the project's background and aim. Results using directional audio coding (dirAC) to separate sparse signals will be presented. This method has been shown to have successfully separated two speakers at known positions from a virtual B-format soundscape.

An extension of this method using the dual-tree complex wavelet transform will also be presented, which improves the sparsity of the time-frequency representation. Initial results for spatially known sources will be presented.

It is expected that some results from current work on localising and tracking sources in a B-format soundscape will be presented.