

Calibration of the QESTRAL Model for the prediction of Spatial Quality

Robert Conetta, Martin Dewhurst, Francis Rumsey, Slawomir Zielinski, Philip Jackson, David Meares, Søren Bech and Sunish George

Abstract

The QESTRAL model is a perceptual model that aims to predict changes to spatial quality of service (SQoS) between the soundfield reproduced by a reference system and that of an impaired version of the reference system. To calibrate the model subjective data collected from listening tests is required. The QESTRAL model is designed to be format independent and therefore it relies on acoustical measurements of the reproduced soundfield derived using probe signals (or test signals). The measurements are used to create a series of perceptually motivated metrics, which are then fitted to the subjective data using a statistical model.

This paper has two parts. The first part describes the implementation and results of a listening experiment designed to investigate changes to spatial quality. The second part, presents results from a calibration and forecasts prediction power (via cross-validation) of the QESTRAL model.