

**Title:**

SPECTRAL DIFFERENCES BETWEEN LIGHT AND DARK SOUND COLOUR AND ITS  
IMPACT ON EGG

**Presenter(s):**

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**Abstract:**

Introduction: Sound Coloured has proven to be a pedagogically appropriate concept for practically working with the much-discussed and often not-agreed upon term 'timbre'. This study investigated the Sound Colour concept from the Complete Vocal Technique Method by Long-Term Average Spectrum to explore whether spectral differences are observable between various sound colours, and if so, if the concept of sound colour could be related to specific spectral changes. Moreover, the study investigated the modes of singing Neutral, Curbing, Overdrive, and Edge and whether changing sound colour as observed on LTAS would impact the EGG responses for the respective modes.

Method: 20 professional singers (10 male, and 10 female) were asked to sing a sustained vowel in each of the 4 modes, and change their sound colour from light to dark. An acoustic, head mounted omnidirectional microphone was used to record the sound, and a Laryngograph was used to capture EGG data. In SpeechStudio, LTAS was used to explore the spectral features, whereas EGG measurements were analysed to observe the physiological aspects of the vocal fold activity.

Results: Changing sound colour, even within the same mode, impacted the LTAS response. Particularly, some specific harmonic peaks seem to shift up and down as the sound colour changed from light to dark. The EGG data did not change along with the sound colour change.

Conclusions: The findings seem to indicate that the mode of singing, i.e. either Neutral, Curbing, Overdrive, or Edge, can be sustained consistently while changing the sound colour, as the EGG does not change while the LTAS response does change. This would suggest that the singing mode and the acoustic perception of sound colour are indeed two different phenomena, while they may be interrelated, and should be investigated as such.