SINGING PHONETICS – A UNIVERSAL MATRIX OF VOWEL SOUNDS FOR SINGERS AND SPEAKERS

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Singing phonetics introduces a comprehensive matrix of vowel sounds in relation to the voice's harmonics, applicable for singing and speaking voice. It visualizes the exact position of harmonics in the IPA vowel chart for any pitch by means of a harmonic matrix. These positions represent the extact vowel nuances that support the voice best. This is where vocal tract resonance frequencies (formants) match the frequencies of harmonics according to Johan Sundberg, or a little below according to Ingo Titze.

The scheme is the missing link between Bertrant Coffin's *Overtones of Belcanto* and my *Choral Phonetics* (presented at PEVOC 11). With the scheme, formant tuning can be discussed on a better basis. It easily explains which vowels carry the voice most effectively, why sopranos have only 2 resonant vowels above C5 and how to perform formant tuning without trial and error. It also serves as a tool for choir conductors to find appropriate choral phonetic vowels for every voice section.

The scheme is not only theory. Singers can controll their formants by developing their skills in hearing overtones. As the scheme visualizes just acoustic phenomena, it applies also to speaking voice and can for example help learning the correct pronunciation of foreign languages.

In cooperation with the company Sygyt Software we developed an application that plays the vowel sounds for easyer access and displays their functions in the sound spectrum. The practical application of the singing phonetics matrix will be demonstrated with live vocal sounds in combination with spectral analysis.

Audio, beamer and microphone needed.