



EVP-Weekend 5 EVTA LEO 2

European Vocal Pedagogy – Digital Resources Technology

Voice Range Profile Measurement

Objectifying pedagogically and acoustically relevant vocal factors

based on exemplary children's and youths' voices

Terminology

- | Phonetogram
- | Voice range profile

Historical data

- | Phoniatician Calvet (1952)
→ evaluation of the singing voice
- | Waar und Damste (1968)
- | Coleman (1978)
- | European Laryngological Society (ELS)

Computer-based Methods

- | Voice range profile measurement
- | Spectrogram
- | Real-time spectrogram
- | Long-term average spectrogram
- | Periodicity measurement

Basis for Measurement

- | Microphone distance of 30 cm
- | Technical prerequisites (PC)
- | Sound-proofed (living-room-atmosphere)

Measured Parameters

- | Voice range profile of the speaking voice
- | Voice range profile of the singing voice
- | Periodicity analyses/measurement

Parameters of Voice Range Profile Measurement

- | Pitch of the speaking voice
- | Soft speaking voice
- | Normal speaking voice
- | Shouting voice
- | Melodic accent
- | Dynamic accent

Voice Range Profile Classification

- | **Physiological profile of the singing voice:**
quantitative vocal capacity (experiencing the physiological limit)

- | **Musical profile of the singing voice:**
the main focus is on the individual aesthetic quality of the sound

Profile of the singing voice

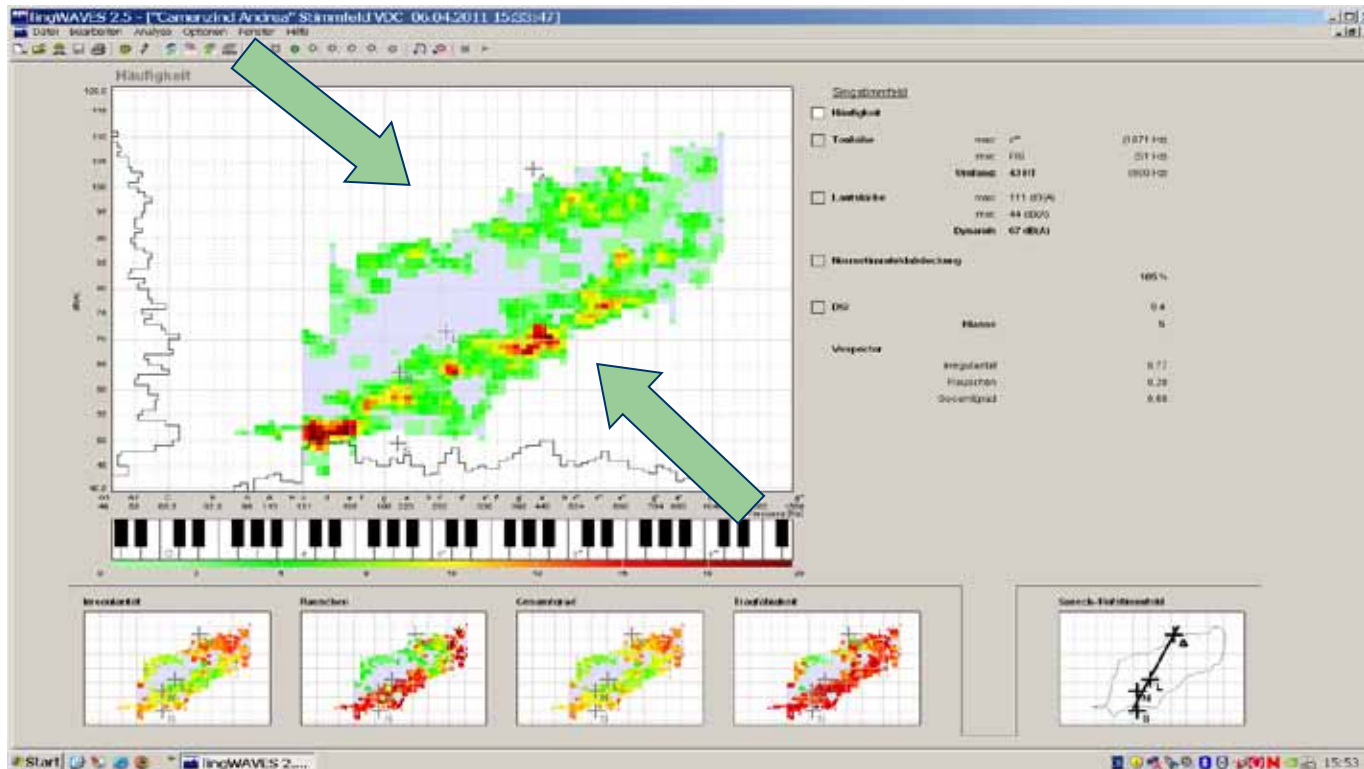
- | Soft singing voice (Vowel /a/)
- | Start: average pitch
- | Hold the tone for 2 seconds
- | Maximum volume

→to experience the physiological limit

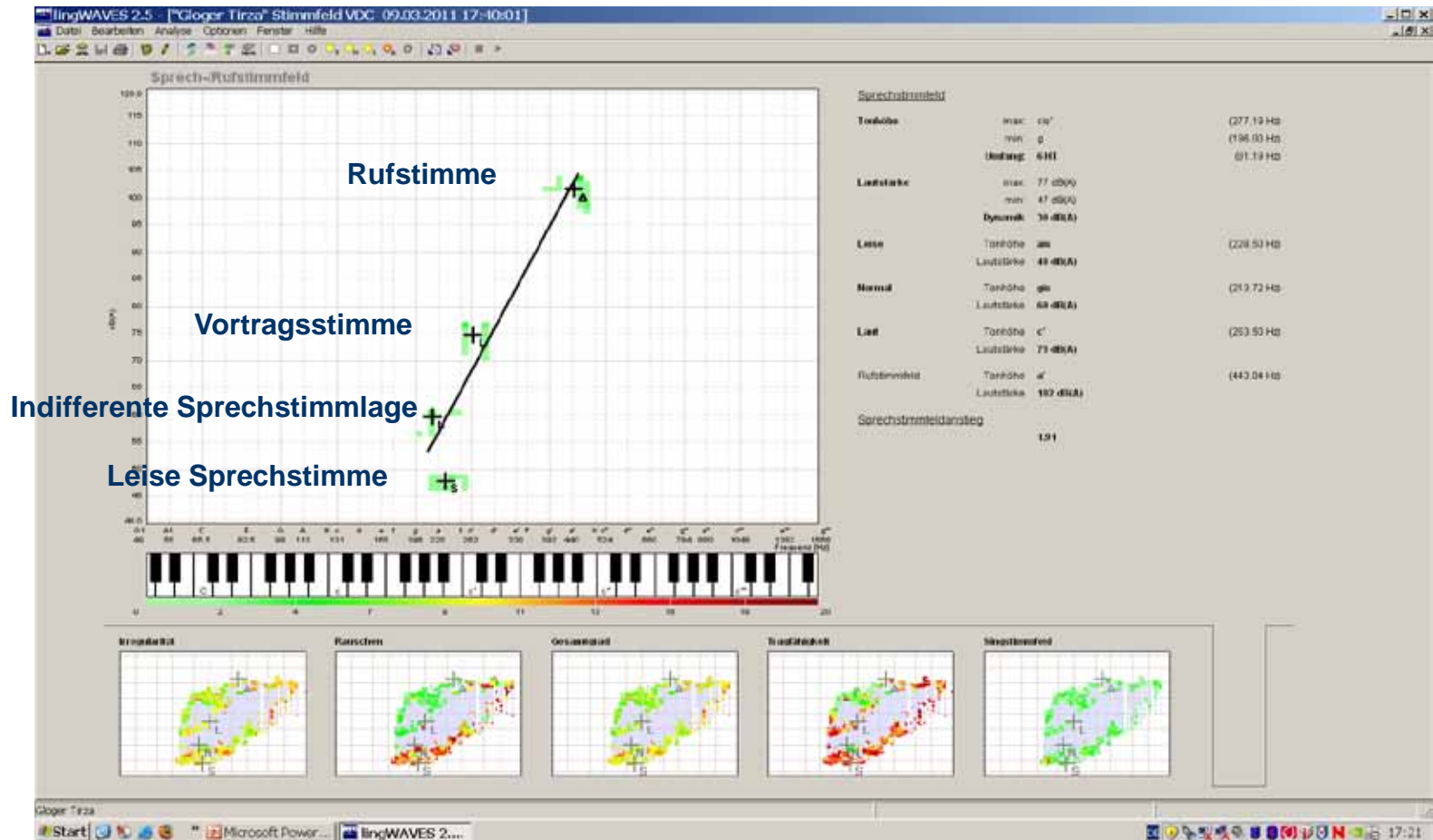
Partial pitch discrete Profile nach J. Pilaj

- | Basis: average speaking voice
- | Determination of intensity range → one and half octave higher than the starting position

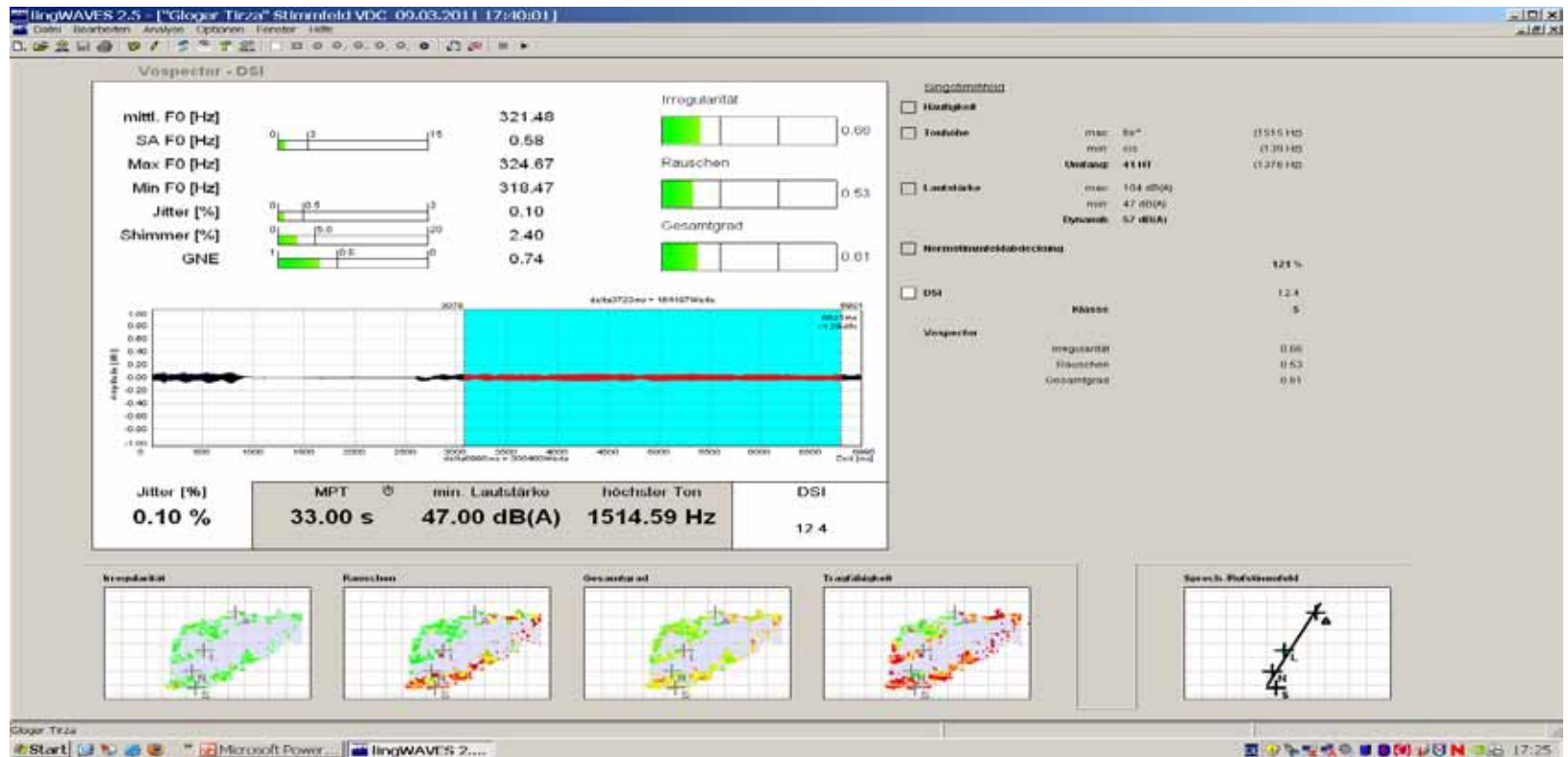
Voice Range Profile Measurement



Voice Range Profile of the Speaking Voice



Periodicity Measurement

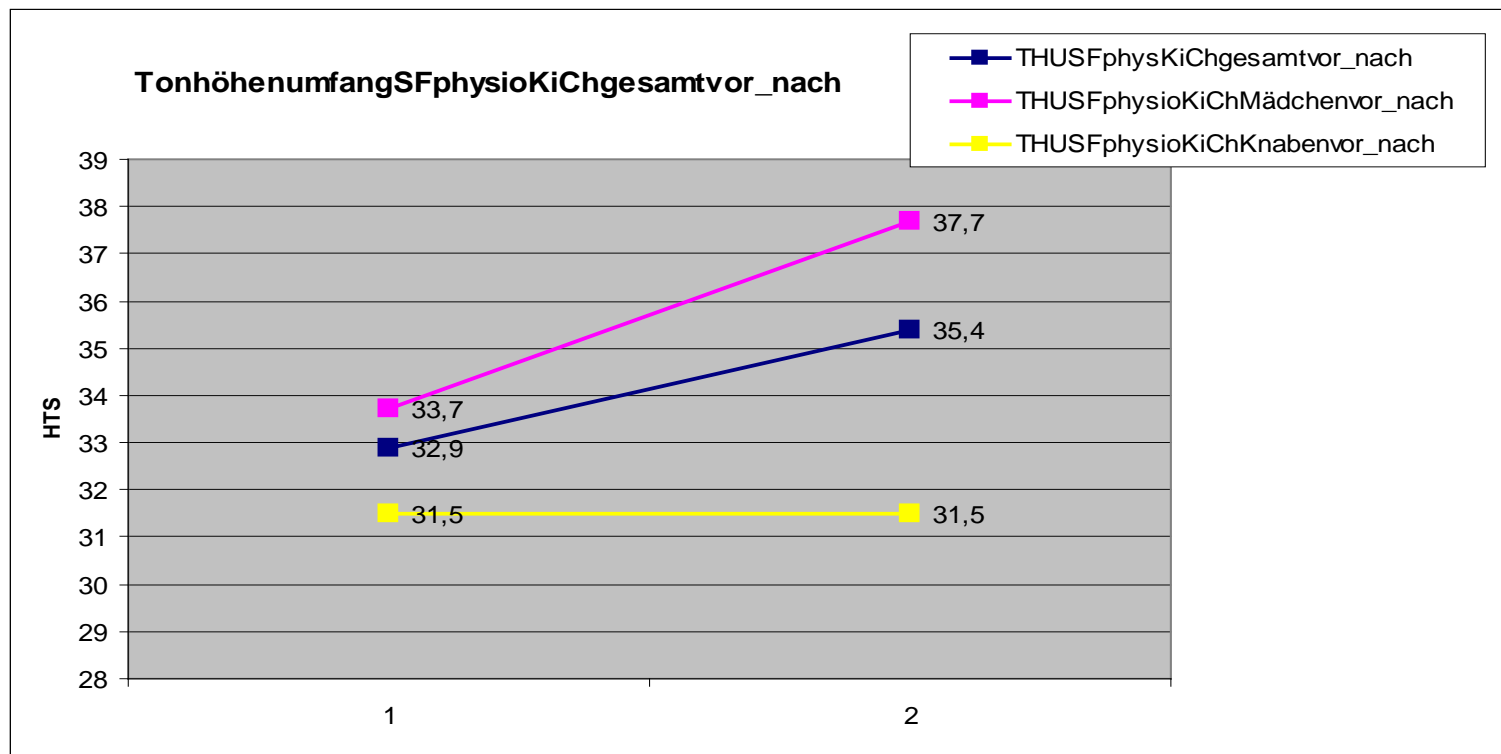


Choral School Vienna – Accompanying Study

- I Group before - after
 1. children's choir
 2. youths' choir

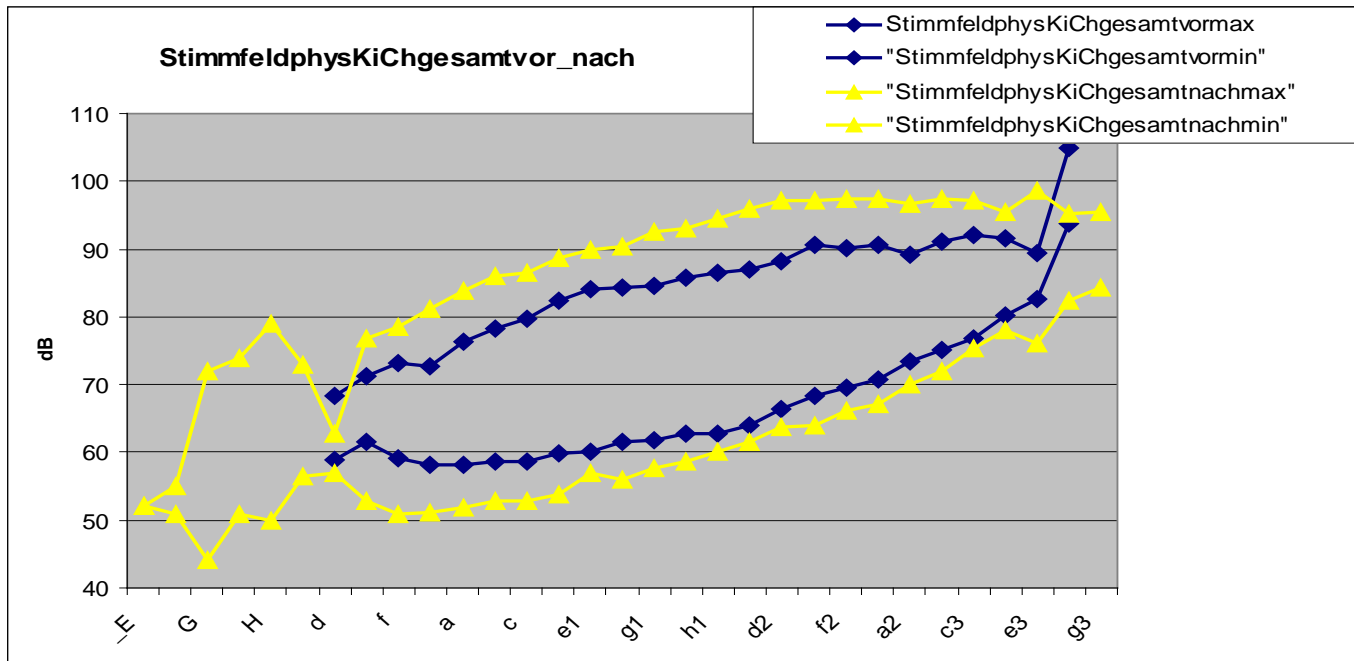
Children 's choir

Physiological pitch measurement before - after



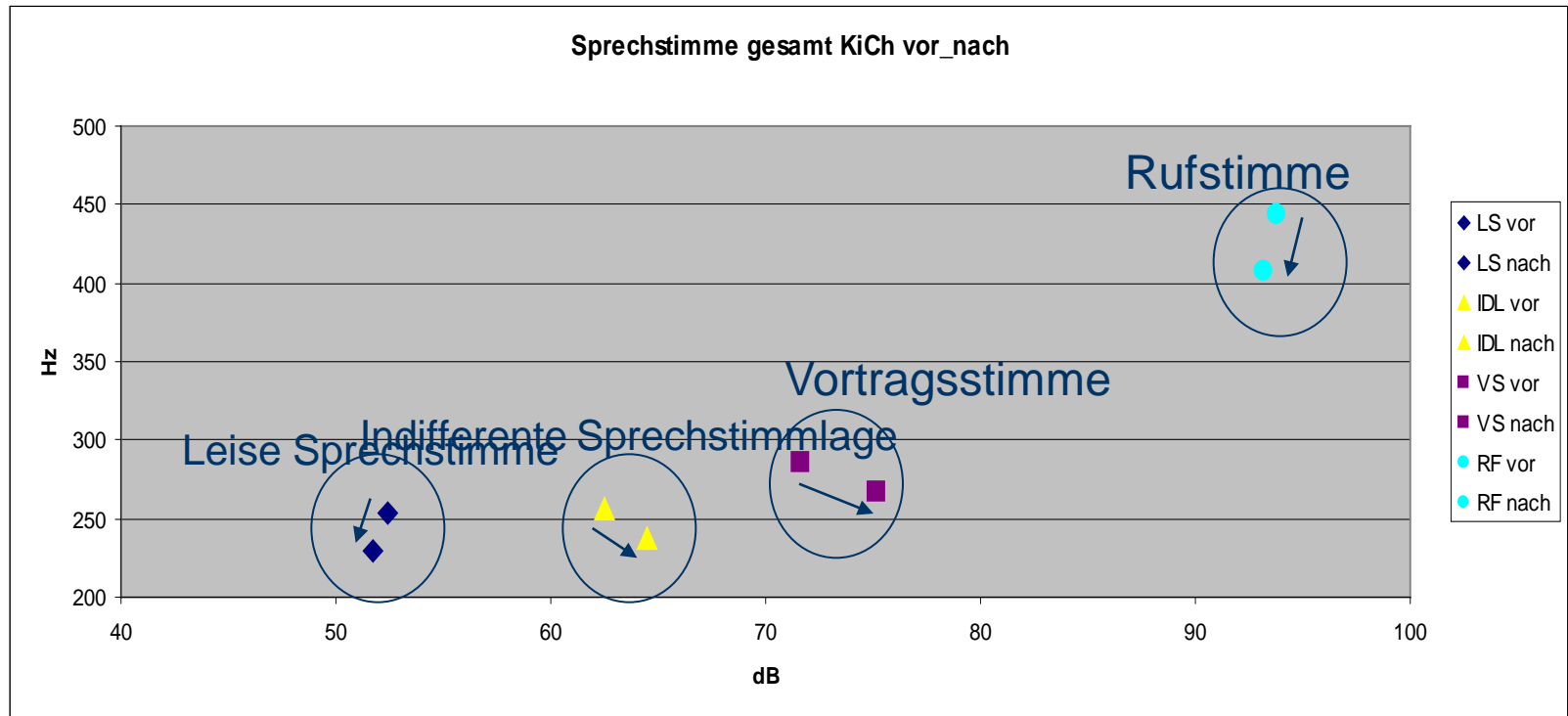
Children's Choir

Complete physiological voice range profile before - after



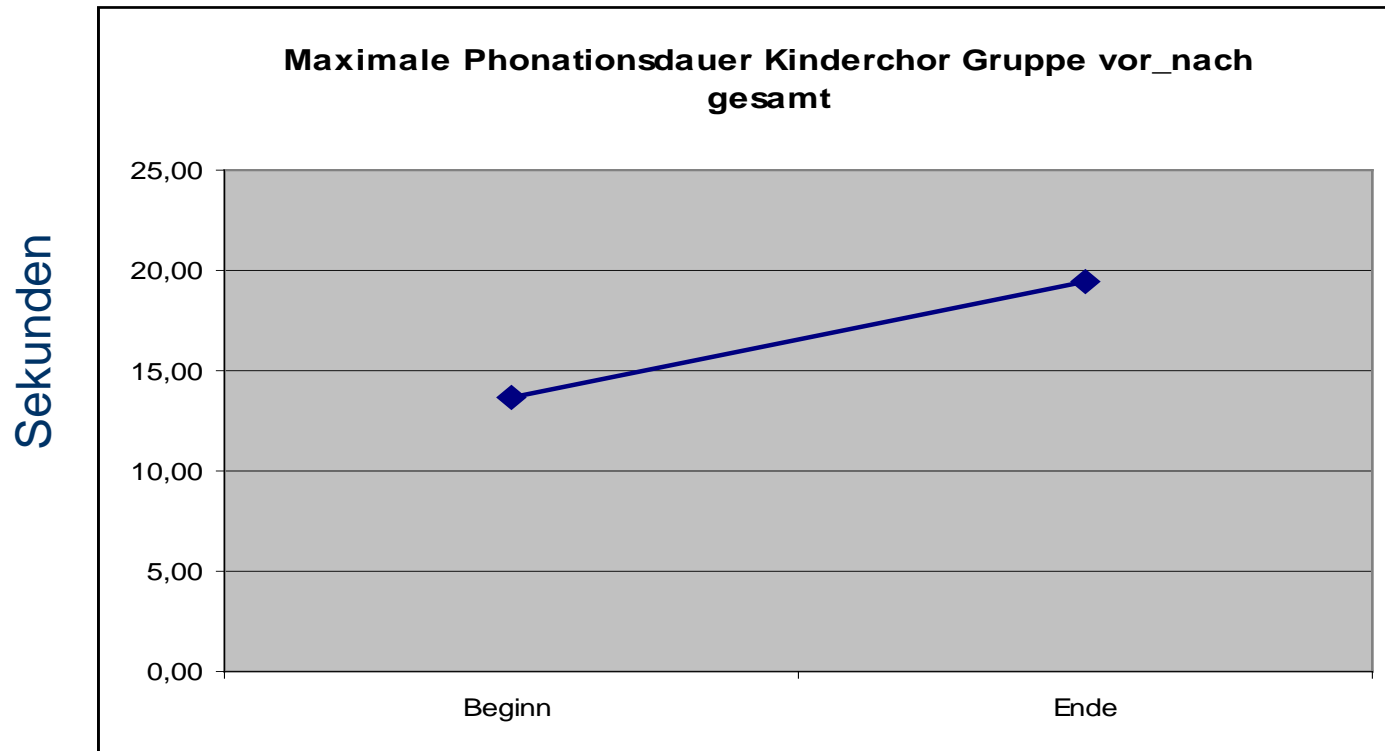
Children 's Choir

Evaluation of the speaking voice



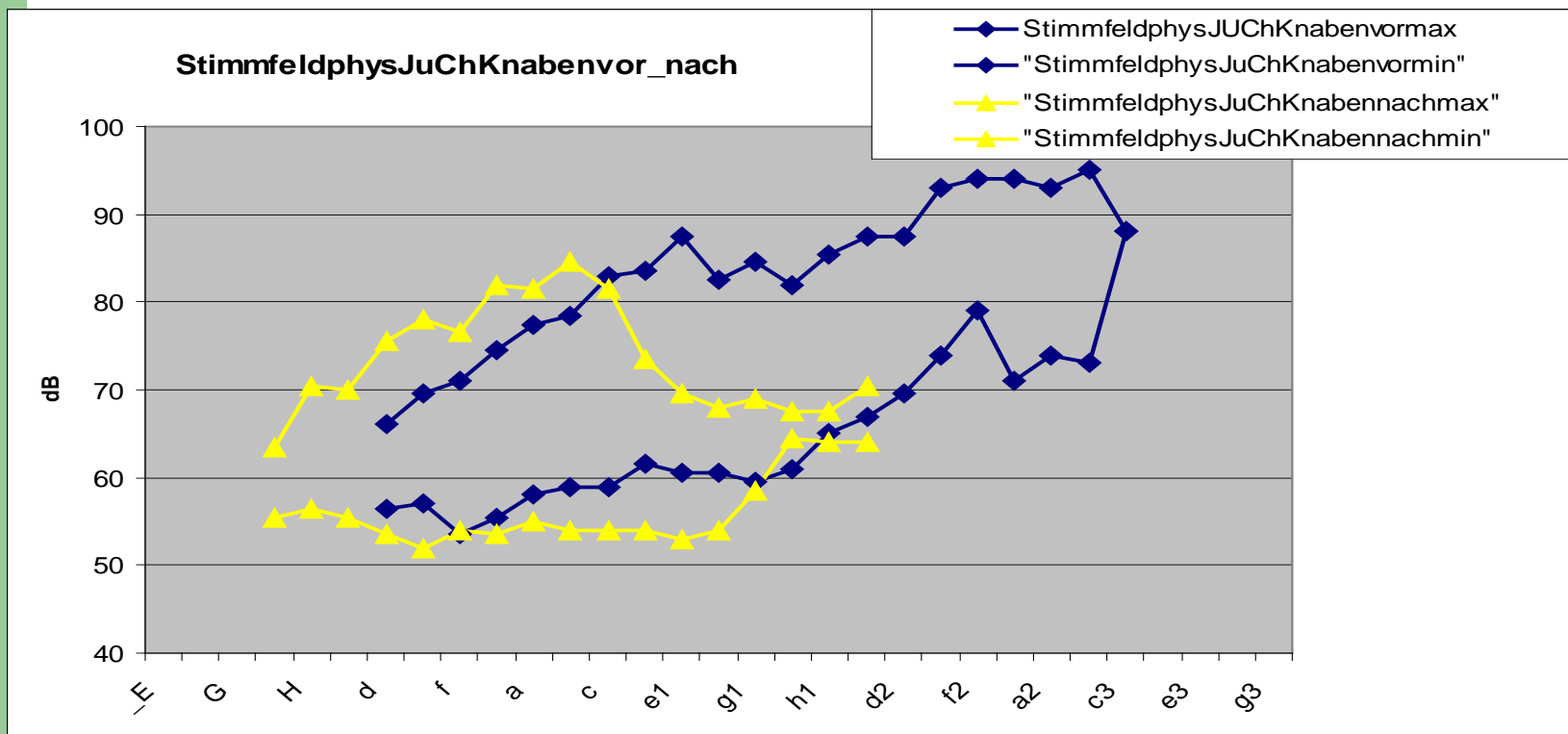
Children 's Choir

Periodicity measurement



Youth Choir

Boys physiological voice range profile before - after



Prospective Study

Aim: to document vocal change

Examination 2004

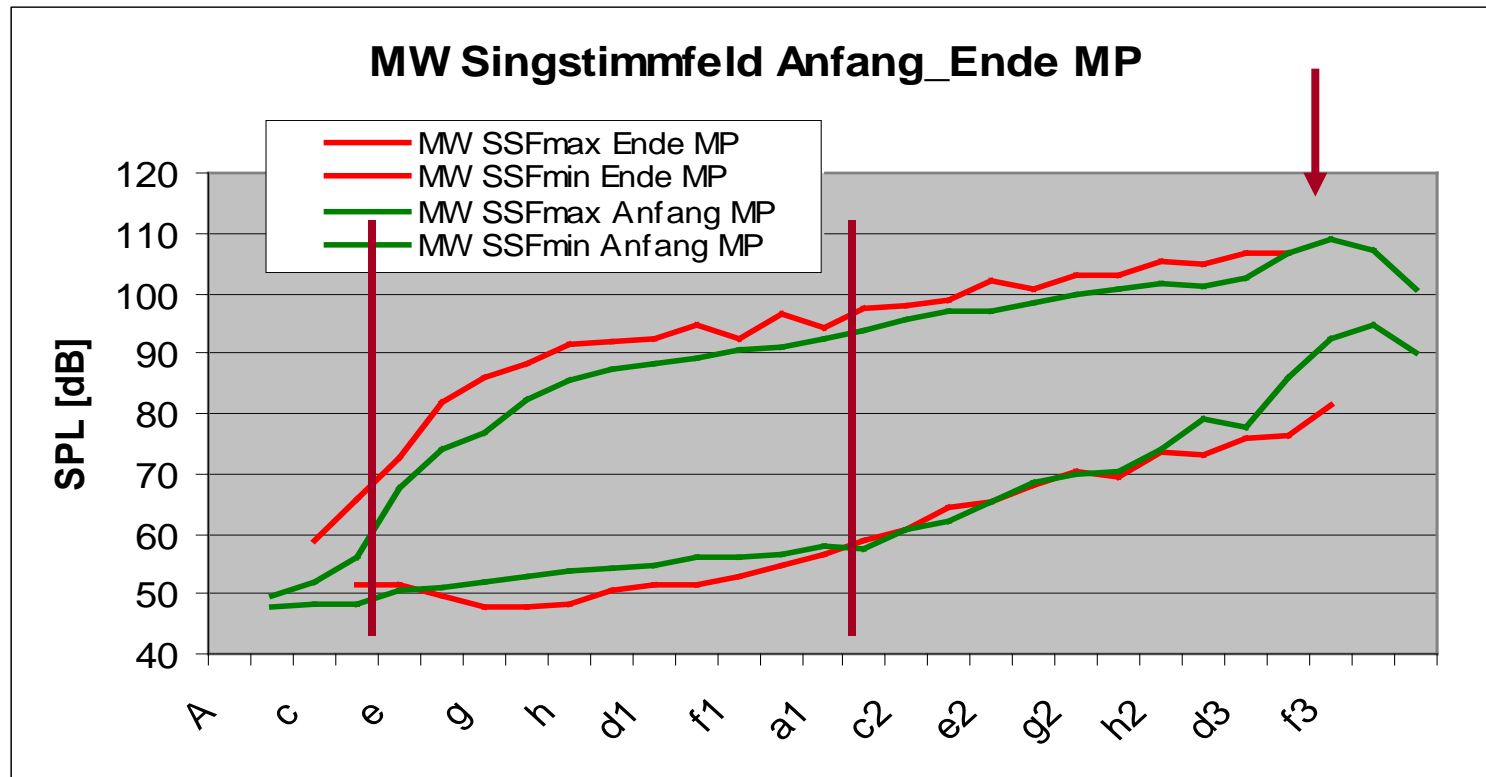
Music education student
at the beginning of study



Examination 2008

Music education student
at the end of study

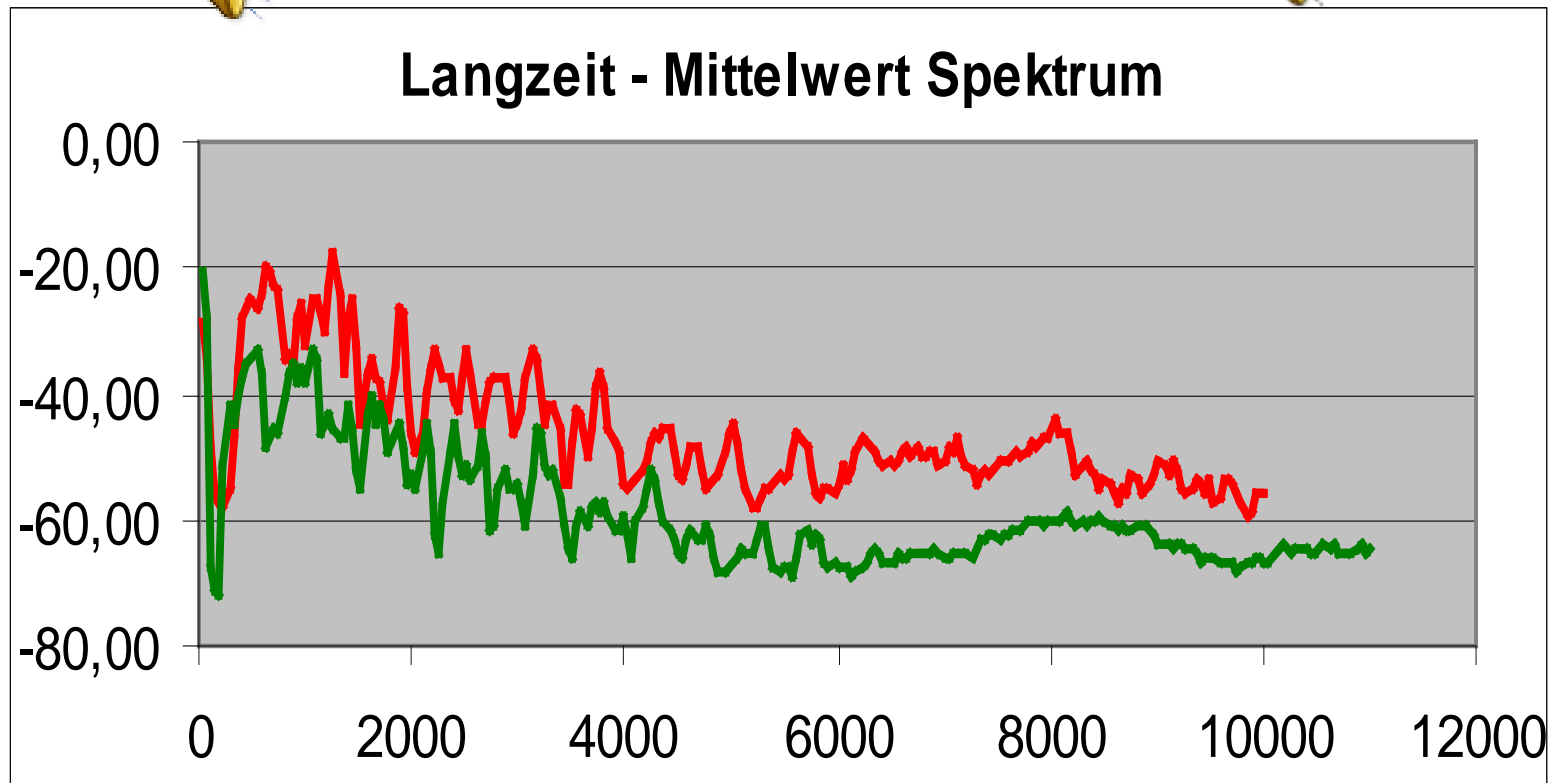
Voice Range Profile of the Singing Voice



Test Person Music Ed. Student

Beginning

End – classical singer



Software for Voice Range Profile Measurement

- | lingWAVES Voice Diagnostic Center (VDC)
- | vidivoice – Stimmfeld <http://www.vidivoice.at>
- | VRRRRP!!: <http://www.christian-herbst.org/vrrrp>

Conclusions:

- What possibilities could acoustic vocal sound analysis hold for vocal pedagogues?



Conclusions: Benefits to teachers

- Possibility to compare the initial state with later stages
- Documentation of progress
- Develop greater scientific understanding of the voice
- Register societal and social trends and students' dealing with the new media
- Benefits the interaction between teacher and student:
 - transfer of certain vocal technical aspects
 - developing musical expression: comparison of timing and span of dynamic variability
 - compared with the notes