

Detmold University of Music

Axel Berndt

Center of Music and Film Informatics

Erich Thienhaus Institute

cemfi

Representatives in the Project



Aristotelis Hadjakos



Music Technology



Malte Kob



Musical Acoustics



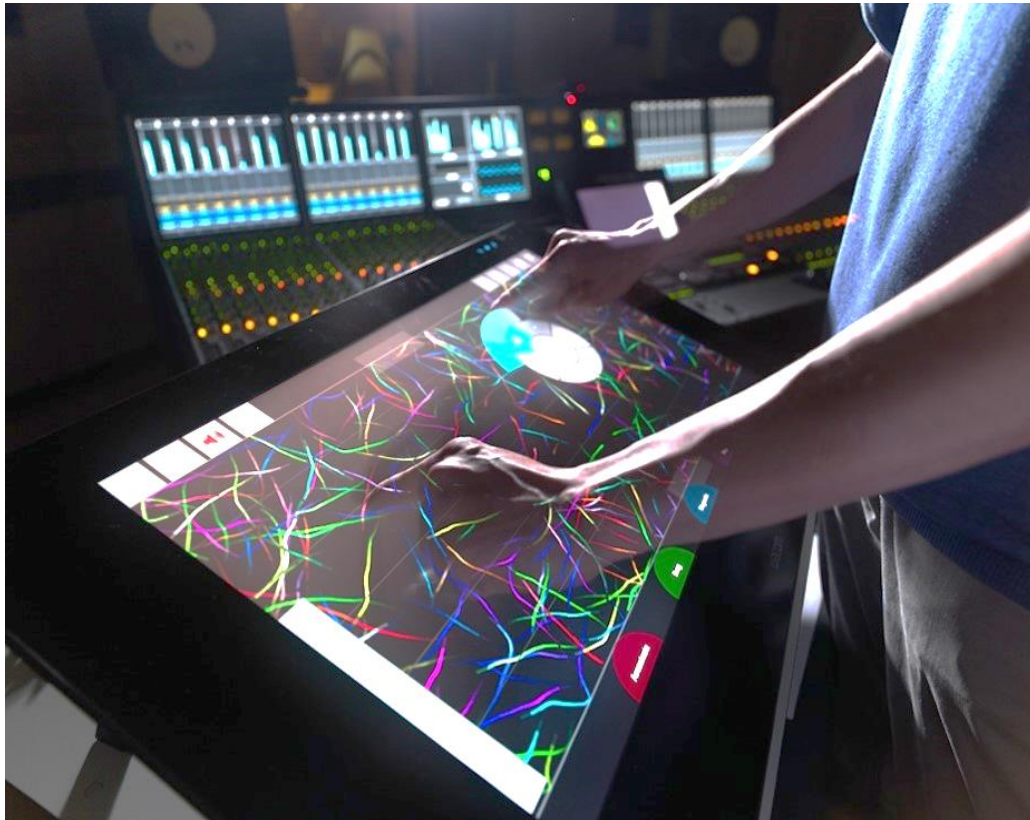
Fabien Lévy

HOCHSCHULE
FÜR MUSIK UND THEATER
»FELIX MENDELSSOHN
BARTHOLDY«
LEIPZIG

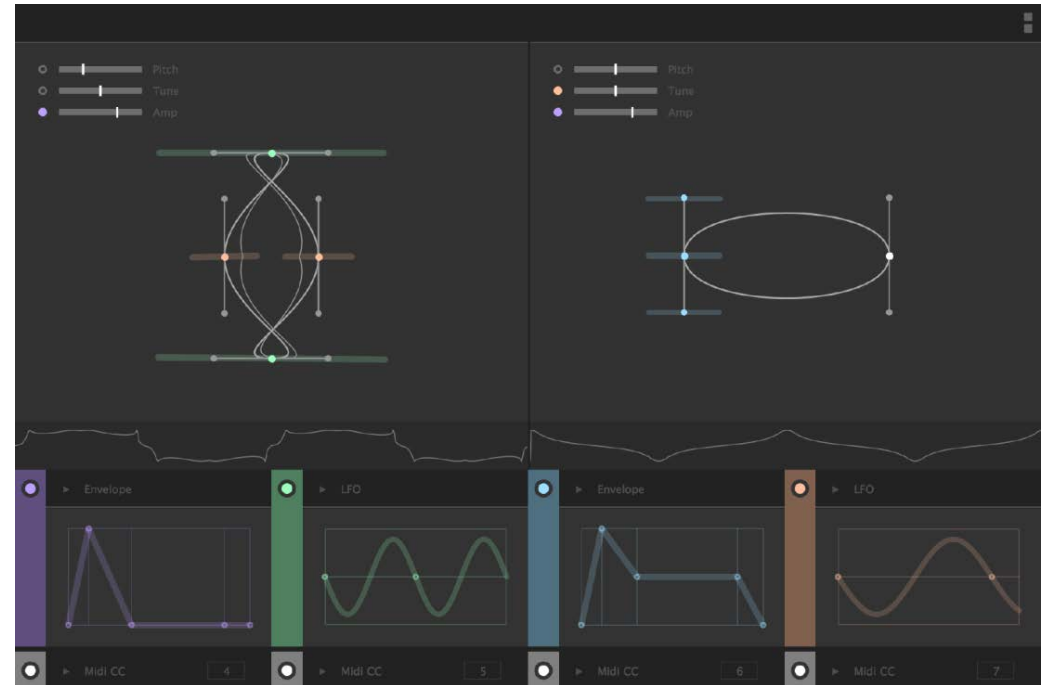


Composition

Musical HCI & Sound Synthesis

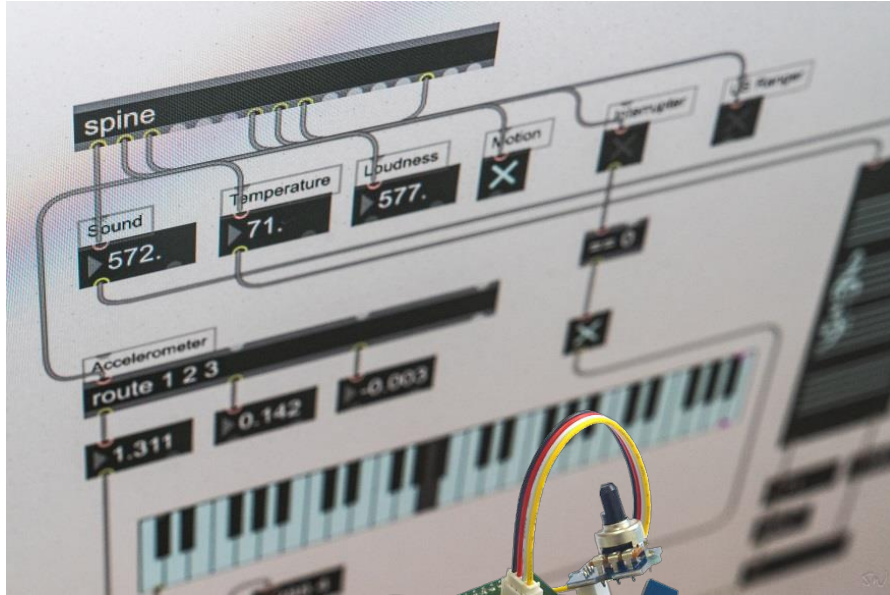


TouchNoise



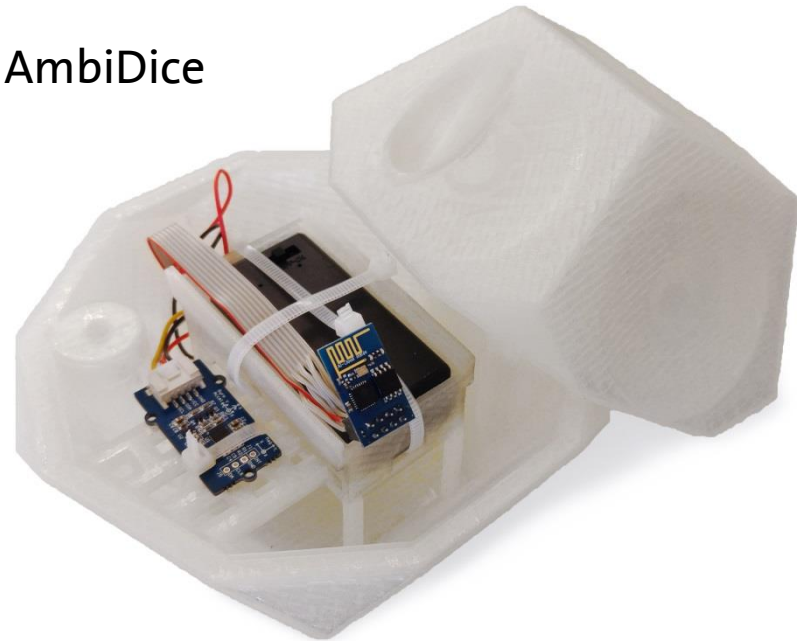
Cyclone

Musical HCI & Physical Computing

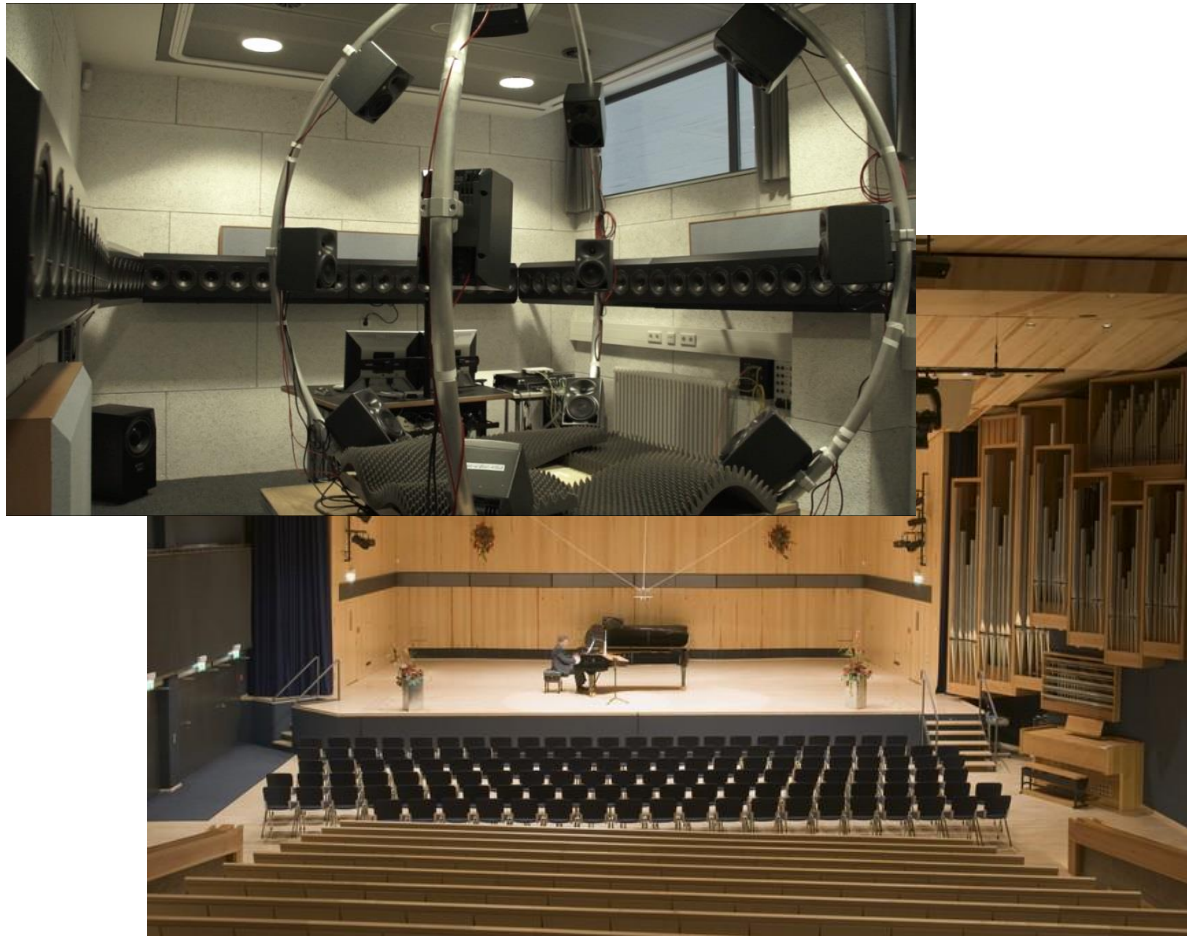


SPINE

AmbiDice



Musical Acoustics: Simulation & Rendering



Wave Field Synthesis in Concert Hall,
Lab and portable

AMISE

Acoustics and Musical Instruments Sound Explorer (AMISE)

Instrument

- ☒ Clavichord
- ☐ Glockenspiel (hard)
- ☐ Glockenspiel (soft)
- ☐ Horn
- ☐ Saxophone
- ☐ Violin (baroque)
- ☐ Violin (modern)
- ☐ Voice (female)
- ☐ Voice (male)

Piece

- ☒ Arpeggio
- ☐ Chromatic Scale
- ☐ Melody

Dynamics

- ☐ Piano
- ☒ Mezzoforte
- ☐ Forte
- ☐ Sforzato

Articulation

- ☐ Legato
- ☒ Non Legato
- ☐ Pizzicato
- ☐ Staccato

Room

- ☒ Brahmsaal
- ☐ Konzerthaus (KH)
- ☐ Sommertheater

Position

- ☒ R1
- ☐ R2
- ☐ R3
- ☐ R4
- ☐ R5
- ☐ R6

Artificial Reverberation (KH only)

- ☐ C1
- ☐ C2
- ☐ C3
- ☐ C4
- ☐ C5
- ☐ C6
- ☐ C7

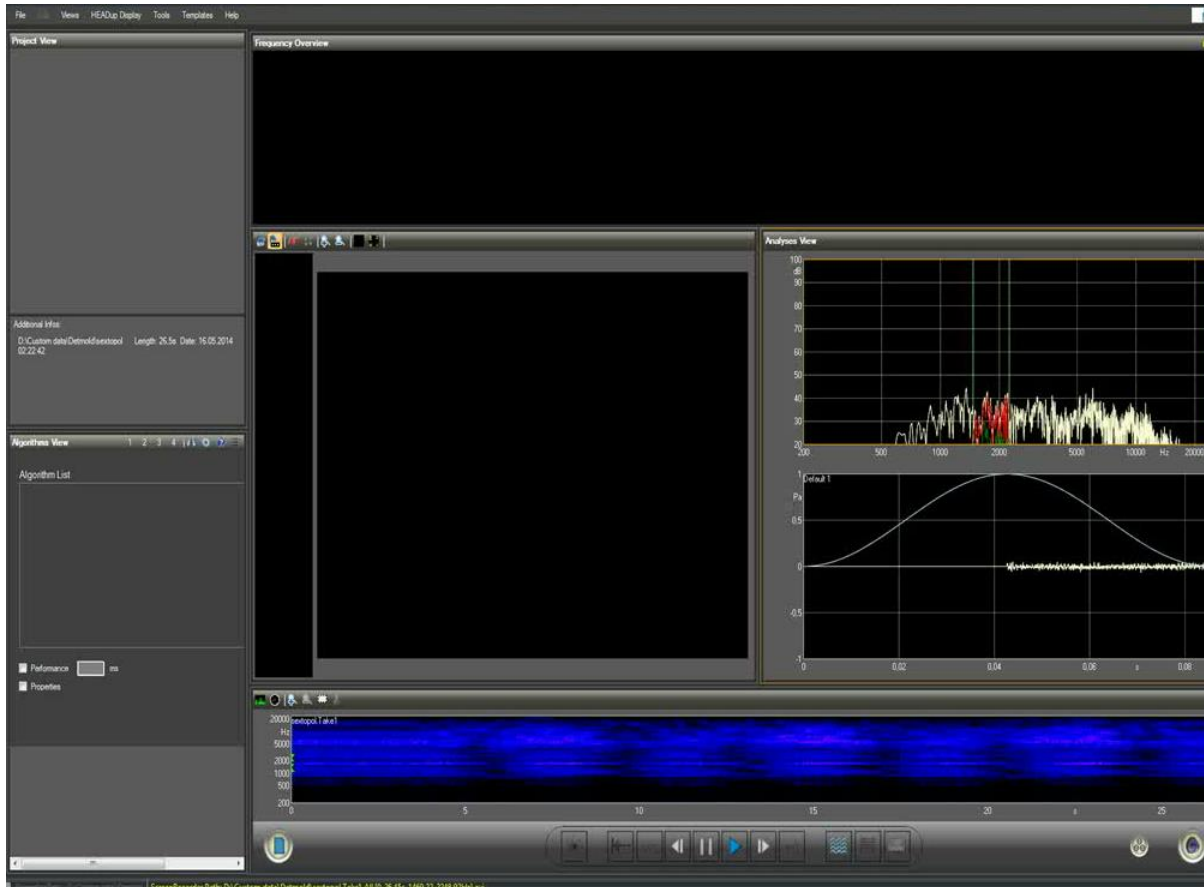
PLAY **STOP**

MIC

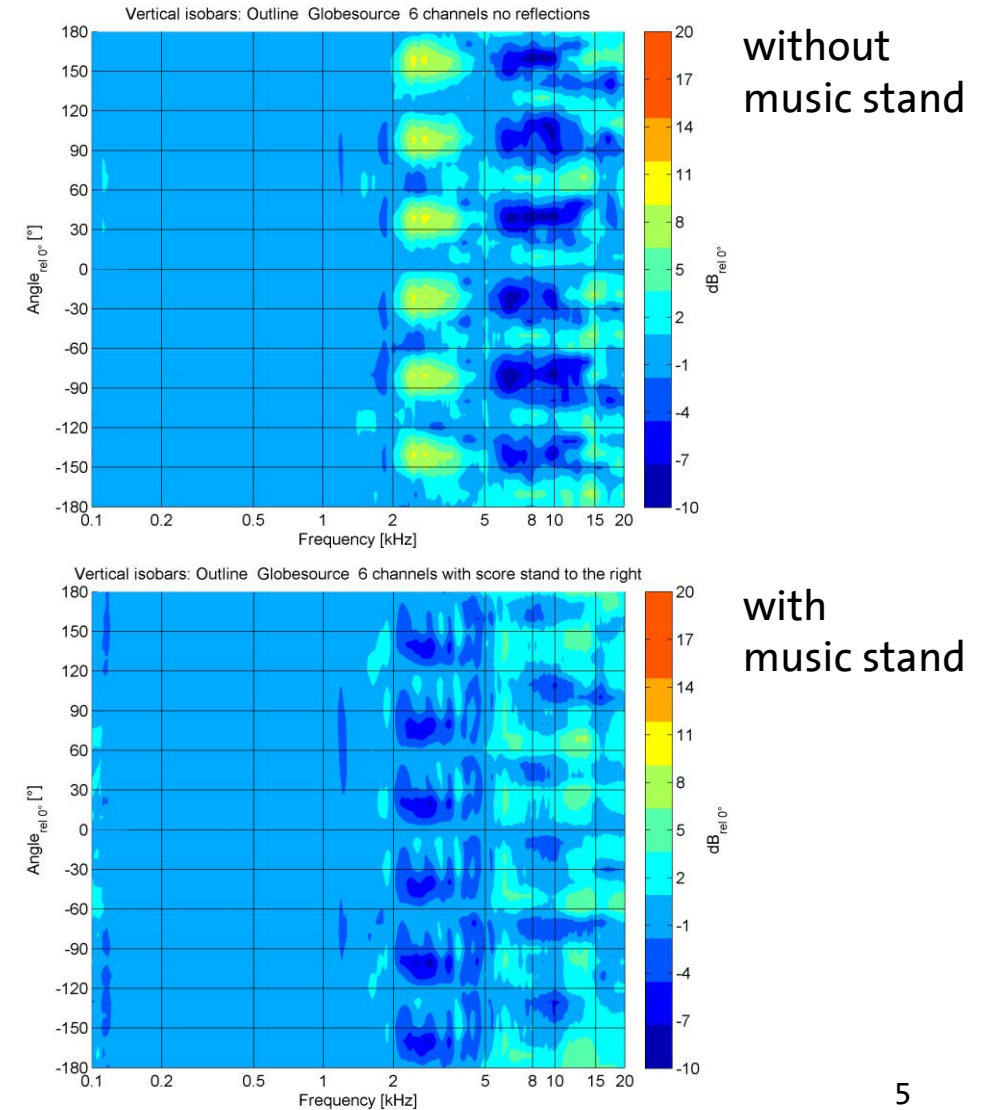
Chrome browser only.
Please use headphones
to avoid audio feedback.

amise.netzwerk-musikhochschulen.de

Musical Acoustics



Sound Radiation from Music Stand



Digital Music Archive



Digitization of the whole archive
of the Erich Thienhaus Institute

**NORDWESTDEUTSCHE MUSIK-AKADEMIE
DETMOLD**


Montag, den 4. Mai 1953, 20 Uhr, Aula

LIEDER-ABEND
Dietrich Fischer-Dieskau
Am Flügel: GUNTHER WEISSENBORN

Vortragsfolge

Franz Schubert (1797-1828)	Sechs Lieder a. d. Zyklus „Der Schwanengesang“ Der Atlas Ihr Bild Das Fischer mädchen Die Stadt Am Meer Der Doppelgänger
Robert Schumann (1810-1856)	„Dichterliebe“ Liederzyklus nach Gedichten von H. Heine Im wunderschönen Monat Mai Aus meinen Tränen Die Rose, die Lilie Wenn ich in deine Augen seh Ich will meine Seele tauchen Im Rhein, im heiligen Strome Ich grolle nicht Und wüßten's die Blumen Das ist ein Flöten Hör' ich ein Liedchen klingen Ein Jüngling liebt ein Mädchen Am leuchtenden Sommermorgen Ich hab im Traum geweinet Allnächtlich im Traume Aus alten Märchen Die alten, bösen Lieder

Es wird höflichst gebeten, die einzelnen Lieder nicht durch Beifall zu unterbrechen.


HE MUSIK-AKADEMIE DETMOLD

d, 22. Februar 1958, 20 Uhr, Aula

derabend
rs - Benjamin Britten
(Klavier)

Vortragsfolge:

I attempt from Love's sickness to fly
 Not all my torments
 I'll sail upon the Dog-Star
 There's not a swain
 Man is for the woman made

Der Einsame
 Sprache der Liebe
 Auf dem Wasser zu singen
 Gesang des Harfners
 Der Musensohn

P A U S E

Seven Sonnets of Michelangelo (op. 22)

FOLK SONGS
 Down by the Sally Gardens
 The Ploughboy
 Come you not from Newcastle?
 Sweet Polly Oliver

(Liedertexte umseitig)

den einzelnen Liedern keinen Beifall

nts-Kammerkonzert am 25. Februar 1958; Stross-Quintett.

Digital Music Editions

ZEN|M|E|M
ZENTRUM MUSIK – EDITION – MEDIEN

Edirom
2016 SUMMER
SCHOOL

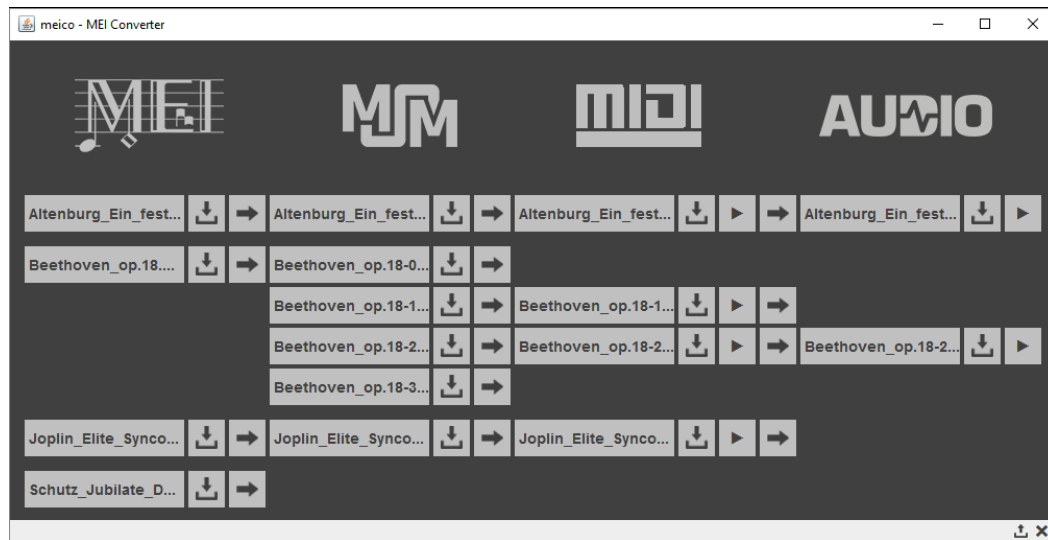
The screenshot displays the Edirom software interface for digital music editions. The main window shows three parallel views of a musical score for 'Ein feste Burg ist unser Gott' (op. 27) by Johann Sebastian Bach:

- ED - Erstdruck (4):** The original first edition score.
- RWA - Werkausgabe (1):** The RWA (Reger-Werkausgabe) edition score.
- AS - Autograph für Straube (3):** The autograph manuscript for the Straube edition.

Each view shows the same musical passage, featuring Orgel (Piano) and I. Man (First Voice) parts. The interface includes a search window on the right with filters for 'Texte', 'Notentexte', and 'Anmerkungen'. A bottom panel displays 'Zugeordnete Faksimile-Ausschnitte (3)' (Assigned Facsimile Excerpts) for the three editions, each with a 'Faksimile öffnen' (Open Facsimile) button. A status bar at the bottom indicates 'Edirom-Hilfe'.

Edirom

Digital Music Editions



meico: MEI Converter



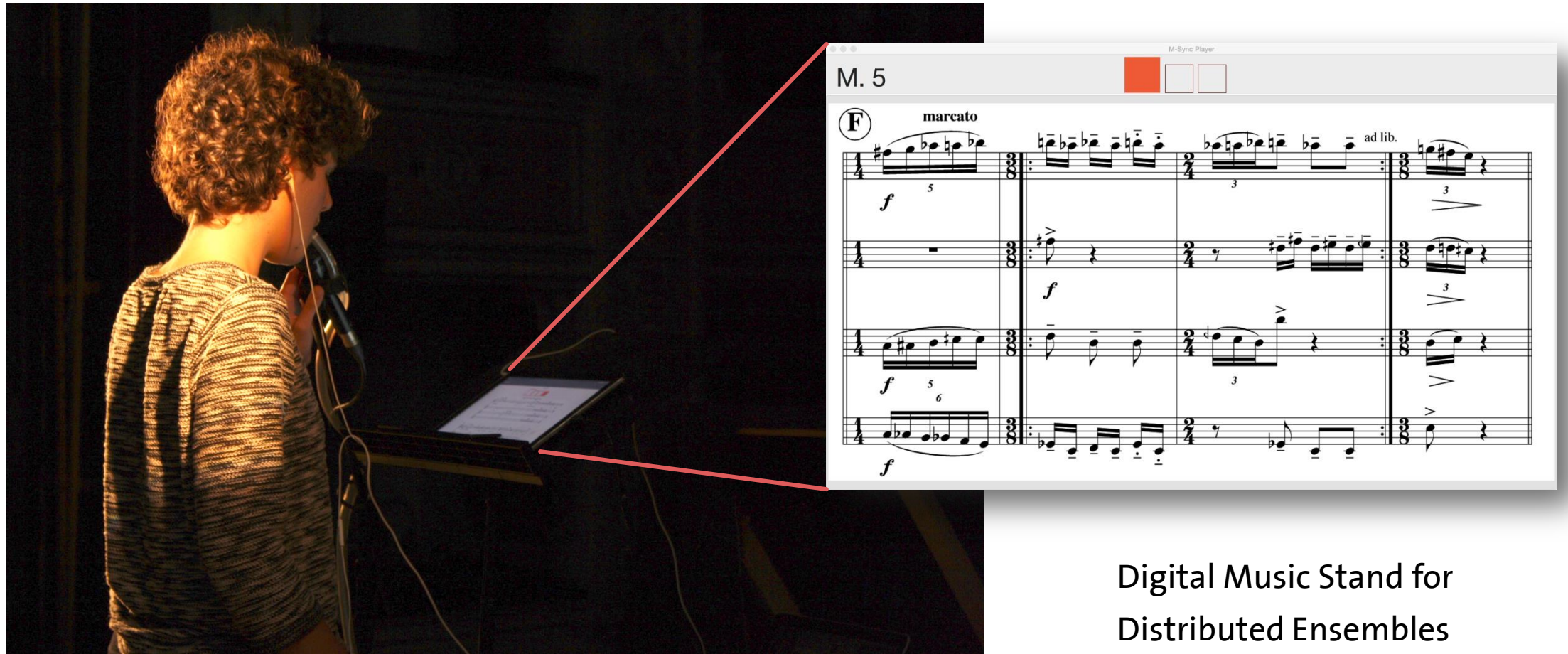
Vertaktoid

Interactive Scores: Audio-to-Score Alignment

The screenshot displays the ScoreTube v0.1 web application. The top section features a video player showing a live performance of Brandenburg Concerto No. 4, BWV 1049 - II. Andante - Crescendo... The video player includes standard controls like play/pause, volume, and a progress bar. Below the video, a detailed musical score is displayed, featuring staves for Solo Violin, Recorder 1, Recorder 2, Violin I, Violin II, Viola, Cello, Double Bass, and Harpsichord. The score is interactive, with a red vertical line indicating the current position in the music. A plus sign (+) is visible above the Solo Violin staff, likely for expanding or collapsing the score. The browser's address bar shows the URL 127.0.0.1:8080/Upload, and the page title is ScoreTube.

ScoreTube

Interactive Scores: Digital Music Stand



Digital Music Stand for
Distributed Ensembles

Interactive Scores: Music Production

The screenshot displays a music production software window titled 'MainWindow'. The main area shows a musical score with two staves. The top staff contains a melody with several notes, and the bottom staff contains a bass line. A red circle highlights a specific note in the top staff, and a red curved line connects it to another note further right. A green circle highlights a group of notes in the bottom staff, and a green curved line connects it to the same note in the top staff. Below the staves, there is a piano roll view with horizontal bars representing notes. The bars are labeled with numbers 13, 14, 15, 16, 17, 18, and 19. The interface includes a menu bar with 'File' and a scroll bar at the bottom.

Expressive Music Performance

musical raw material



sounding result



Music **P**erformance **M**arkup

<https://github.com/axelberndt/MPM>

Future Plans & Sub-Axes Alignment

- Sub-axis 1: MEI processing, orchestration analysis algorithms
- Sub-axis 3: Audio-to-Score Alignment, spatial rendering (AMISE), room-musician-listener interaction
- Sub-axis 5: Model development (MPM, acoustical models), impact of room acoustics on performance and ensemble communication, directivity of musician and instr.
- Sub-axis 6: Integration of machine-readable scores and images (Vertaktoid), link to audio clips (ScoreTube)
- Sub-axis 7: Performance rendering and orchestral simulation (MPM, meico)
- Sub-axes 8-11: Artistic and pedagogical perspective, functional orchestration (Fabien)