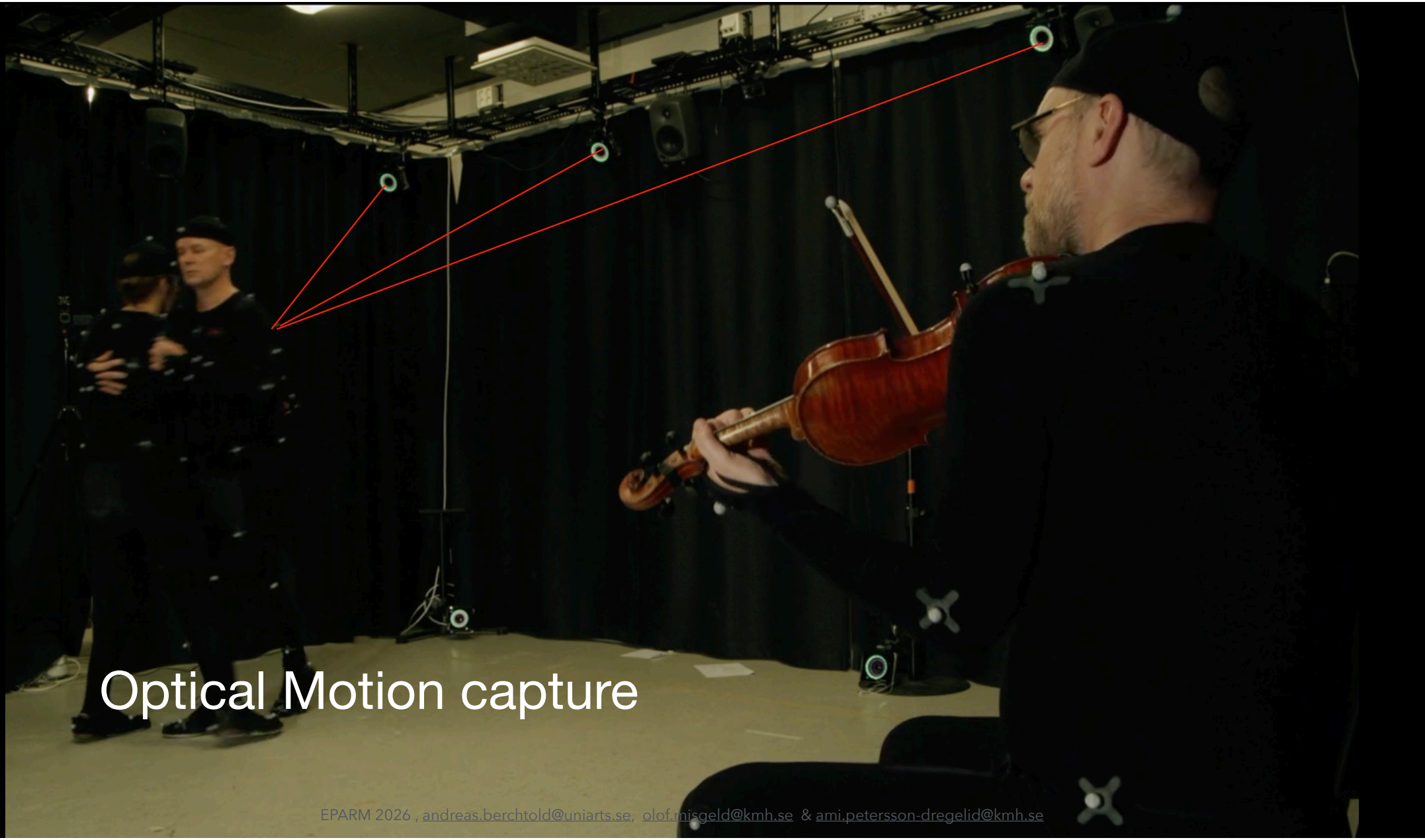
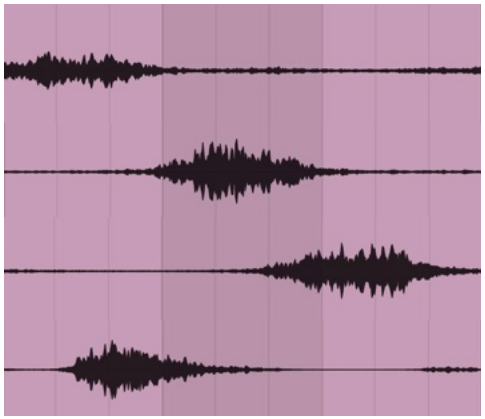
In Motion – Mediations of Interplay

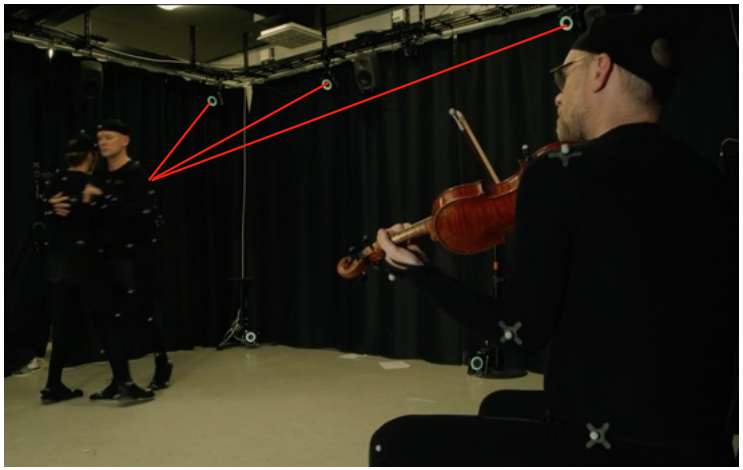
Andreas Berchtold (Stockholm Uniarts), Ami Dregelid and Olof Misgeld (Royal College of Music, Stockholm)

EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se


Optical Motion capture

Sonification





Motion capture

Visualisation

EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se

How do we generate knowledge on playing and dancing?

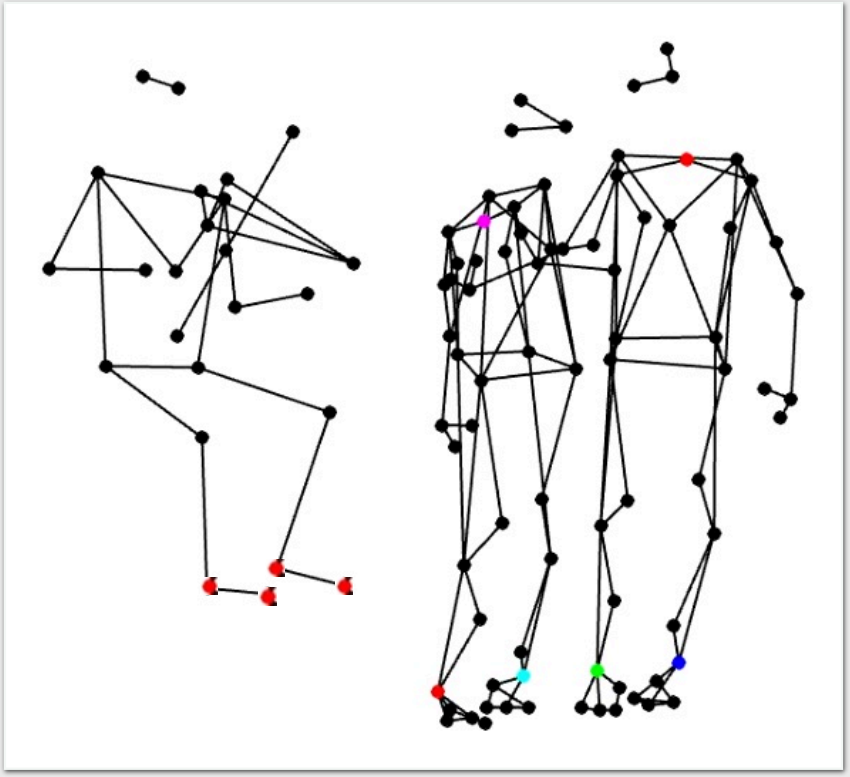
—> Negotiating descriptive and performative concepts in our practice.

Can technologically mediated representations of dance illuminate the shared, bodily knowledge that underlies the co-creative act of “dancing to playing and playing to dancing”?

—> Practice-based analysis: reflection on/by viewing/listening/dancing/playing to sonified/visualised movement.

Sonification: Parameter Mapping

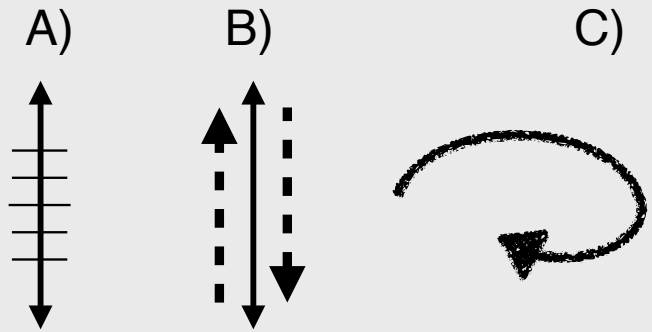
DATA Parameter –> SOUND Parameter



MARKERS

Feet

Back Top



MOVEMENT DIMENSIONS

A) _Y = vertical position

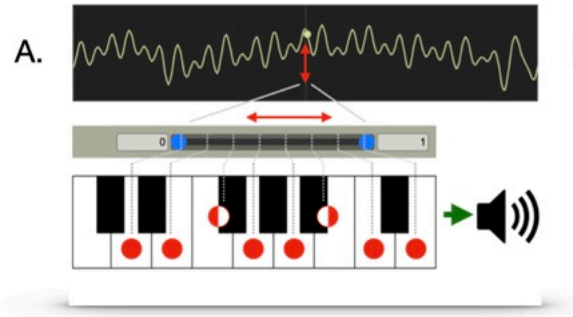
B) _Yvel = vertical speed (derivate of position)

C) _Speed= total speed (3D, norm data)

EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se

Sonification: Parameter Mapping

DATA Parameter –> SOUND Parameter



Sonification "instruments"

CONTINUOS MAPPINGS

Oscillator, Tonal grid including microtones (fig. A)

Parameters for mapping: **pitch, brightness (lowpass filter), volume, panning**

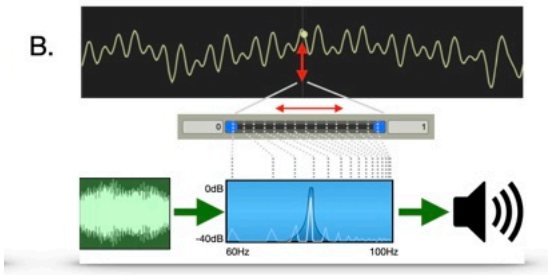
White Noise, Wind-like movement sounds

Parameters for mapping: **filterfreq** (bandpass), **Q, volume, panning**

Overtone_Vn, Timbral qualities (fig. B)

filtered fiddle drone resembling flageolets, willow flute or jaw harp etc.

Parameters for mapping: **Overtone range**, **volume, panning**



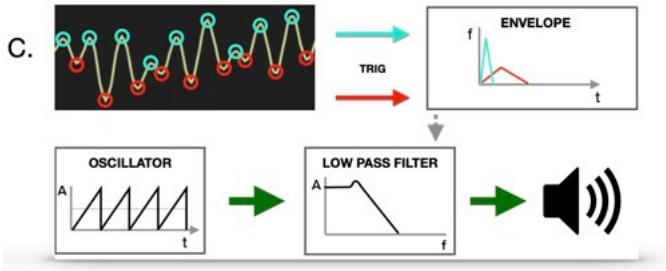
POINTWISE MAPPING

BlippBlopp = Beats (fig. C)

short envelope triggered by maxima points in the movement variable

Parameters: **Crest/Trough, attack/release**, **pitch, volume, panning**

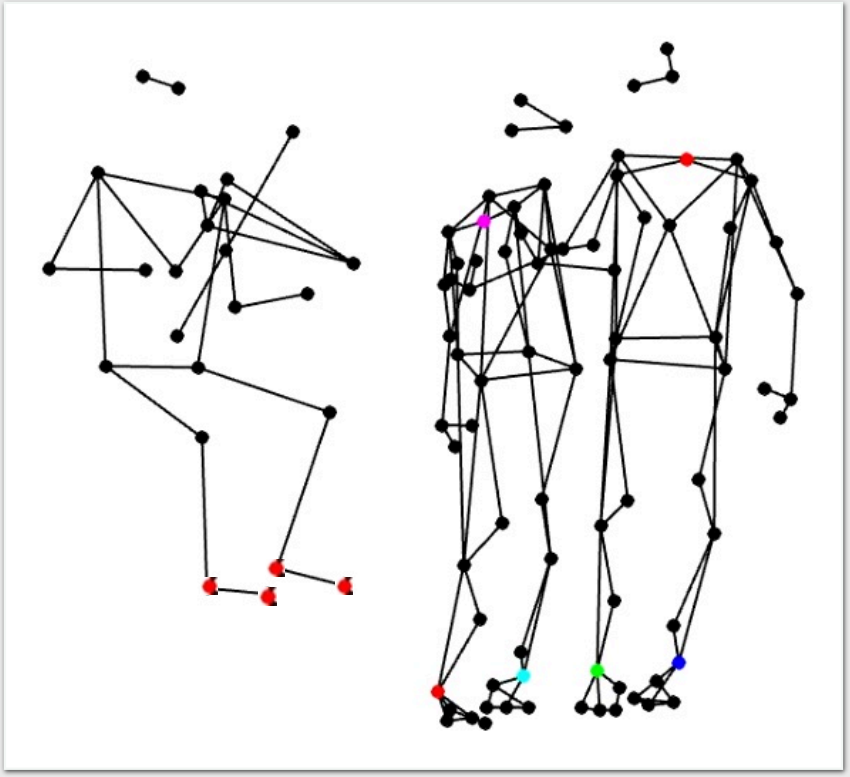
Sample Trigger = steps, kick drum, etc.



EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se

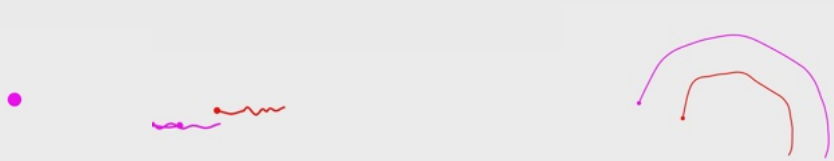
Visualisation

DATA Parameter –> VISUAL Parameter



MARKERS
Feet
Back Top

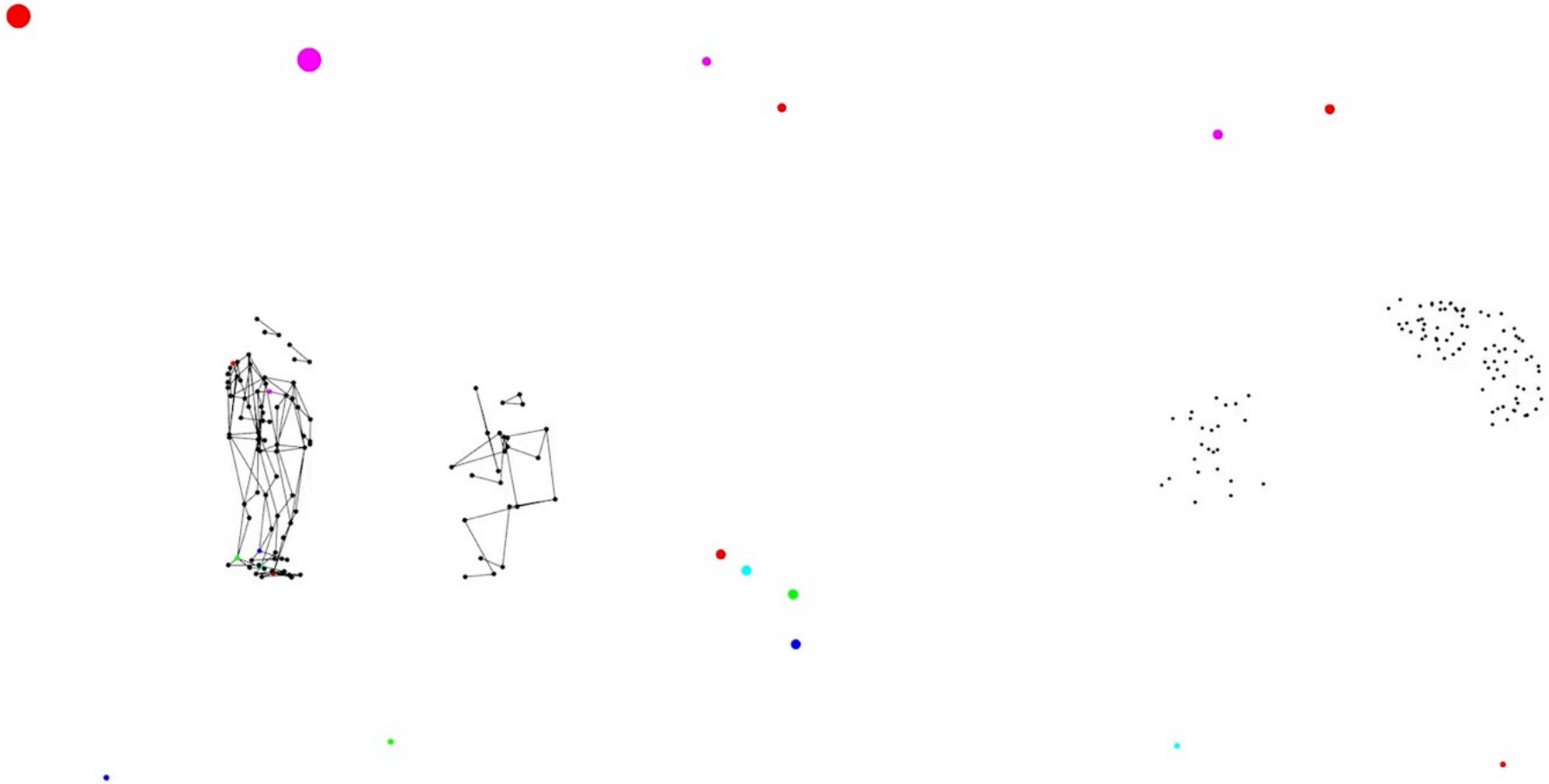
1) 2) 3)



MOVEMENT DIMENSIONS (Back top marker)

1) Vertical position
2) Side view (with tails)
3) Top view (with tails)

EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se



EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se

How do we generate knowledge on playing and dancing?

The Measurable vs the Experienced

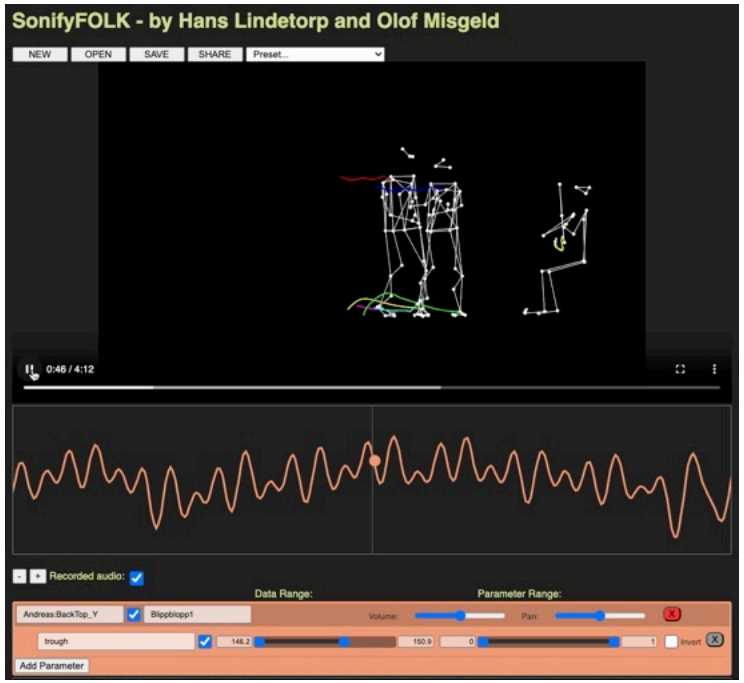
Embodied understanding and knowlegde in practice

Concepts in and out of pedagogic practice

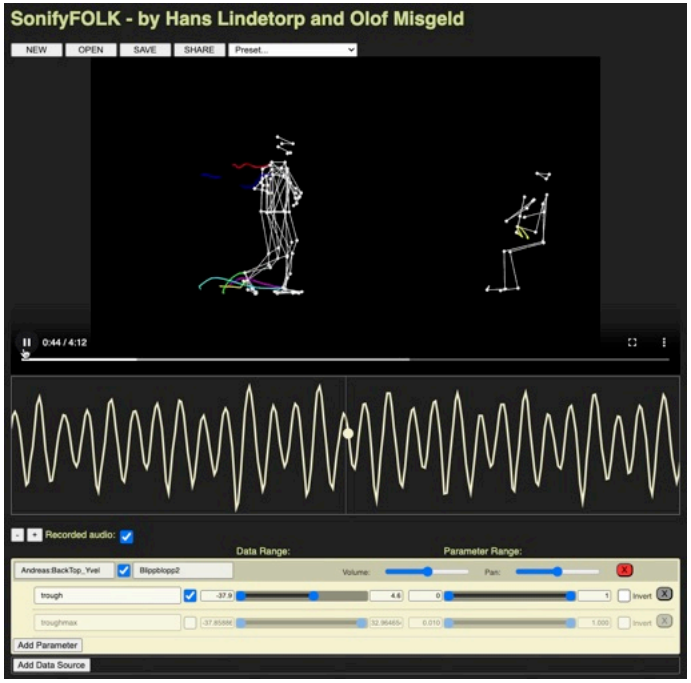
EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se

Sonification of svikt: Back Marker, y-dimension

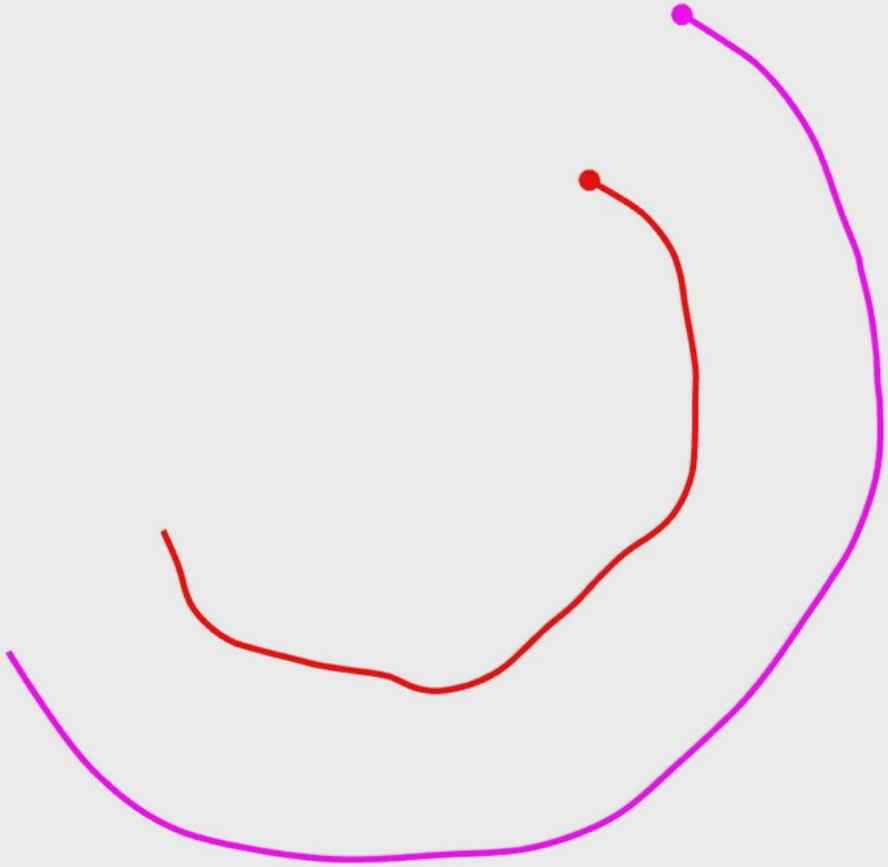
Position



Velocity



EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se

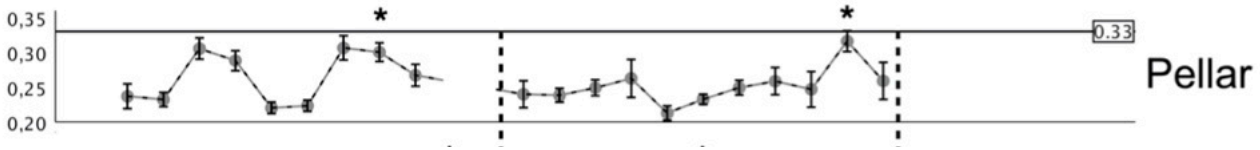


EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se

Asymmetric beat

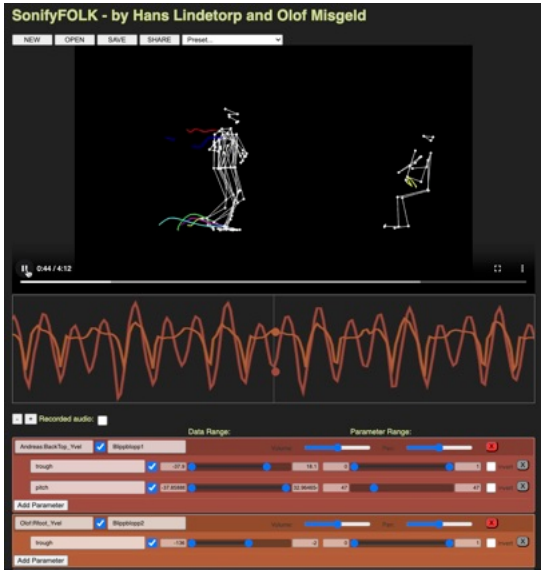
Music:

- asymmetry varies with melody, measure-to-measure.



Dance:

- asymmetric beat articulated more or less during different parts of the dance
- Feet speed patterns mirror asymmetric melody rhythms



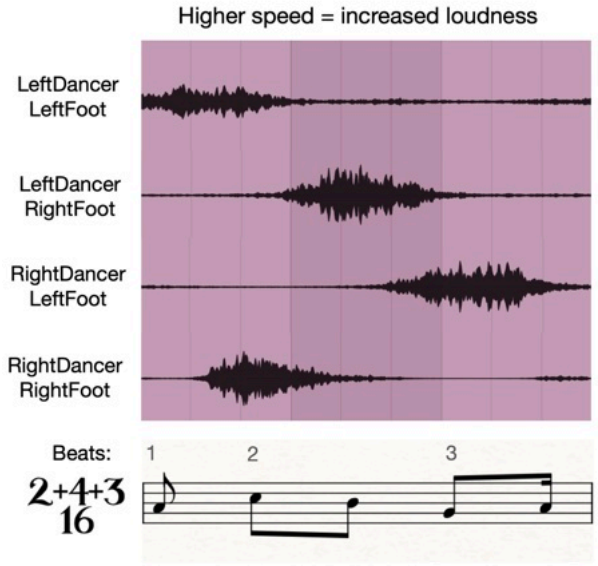


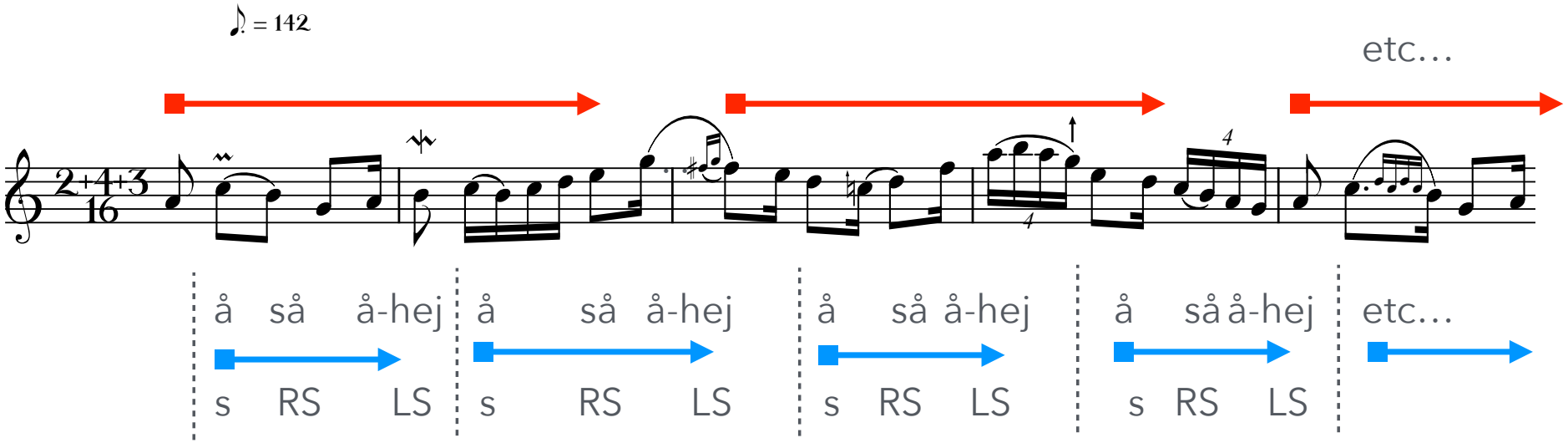
Figure 6: *Feet high speed sonification.* The waveform of the sound for each denoted body part is aligned to the note onsets of the melody during one measure.

Polyrytmic fabric of the monometric polska affords expressive variations within the elastic framework.

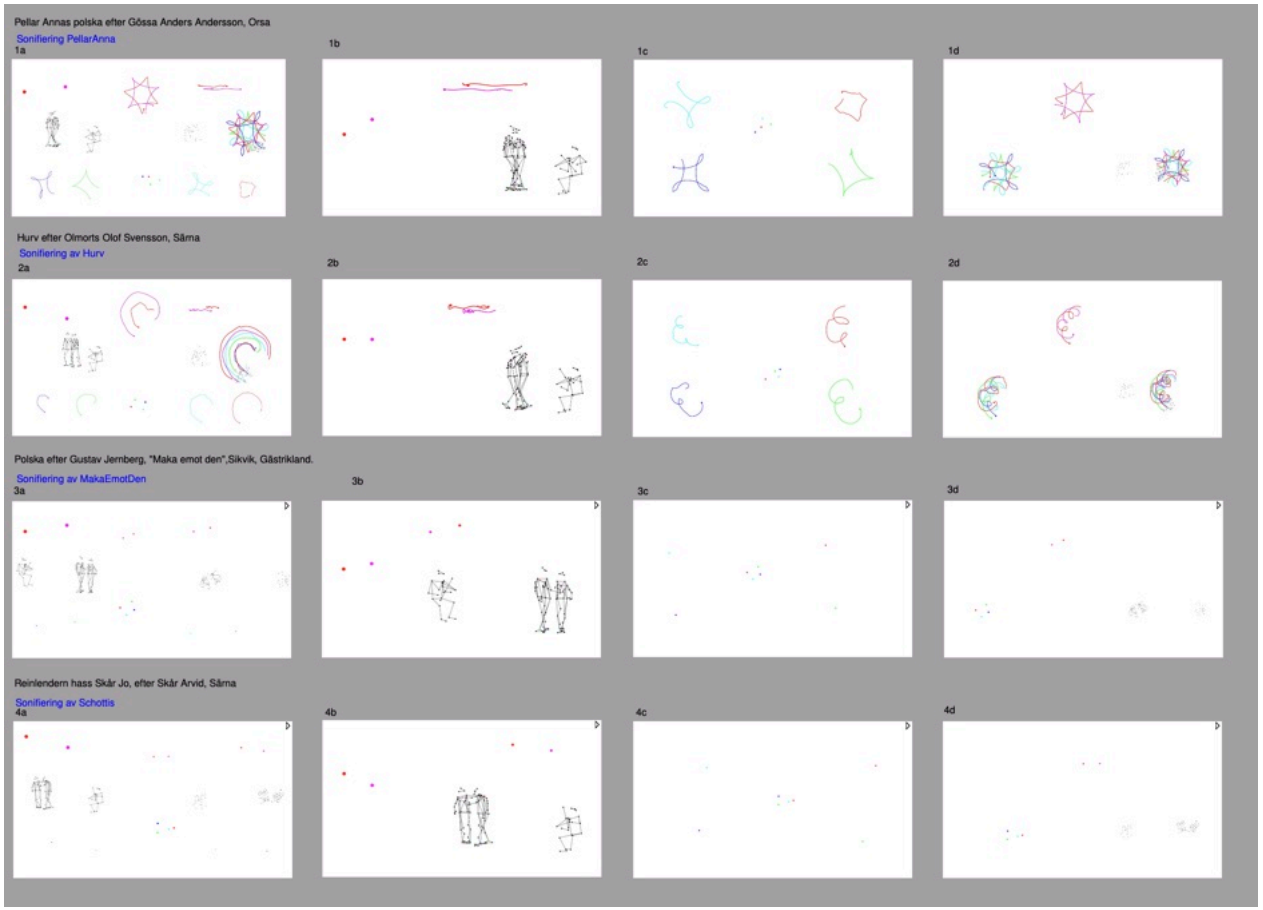
EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se

Polska efter Pellar Anna

Played by Gössa Anders Andersson, Viborg, Orsa.



EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se



https://www.researchcatalogue.net/view/3742994/3742995

EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se

EPARM 2026 , andreas.berchtold@uniarts.se, olof.misgeld@kmh.se & ami.petersson-dregelid@kmh.se