

RITMO

Centre for Interdisciplinary Studies  
in Rhythm, Time and Motion

**CENTRE DIRECTORS:** Professor Anne Danielsen (years 1–5) • Assoc. Professor Alexander Refsum Jensenius (years 6–10)



The Research Council of Norway

UiO • University of Oslo







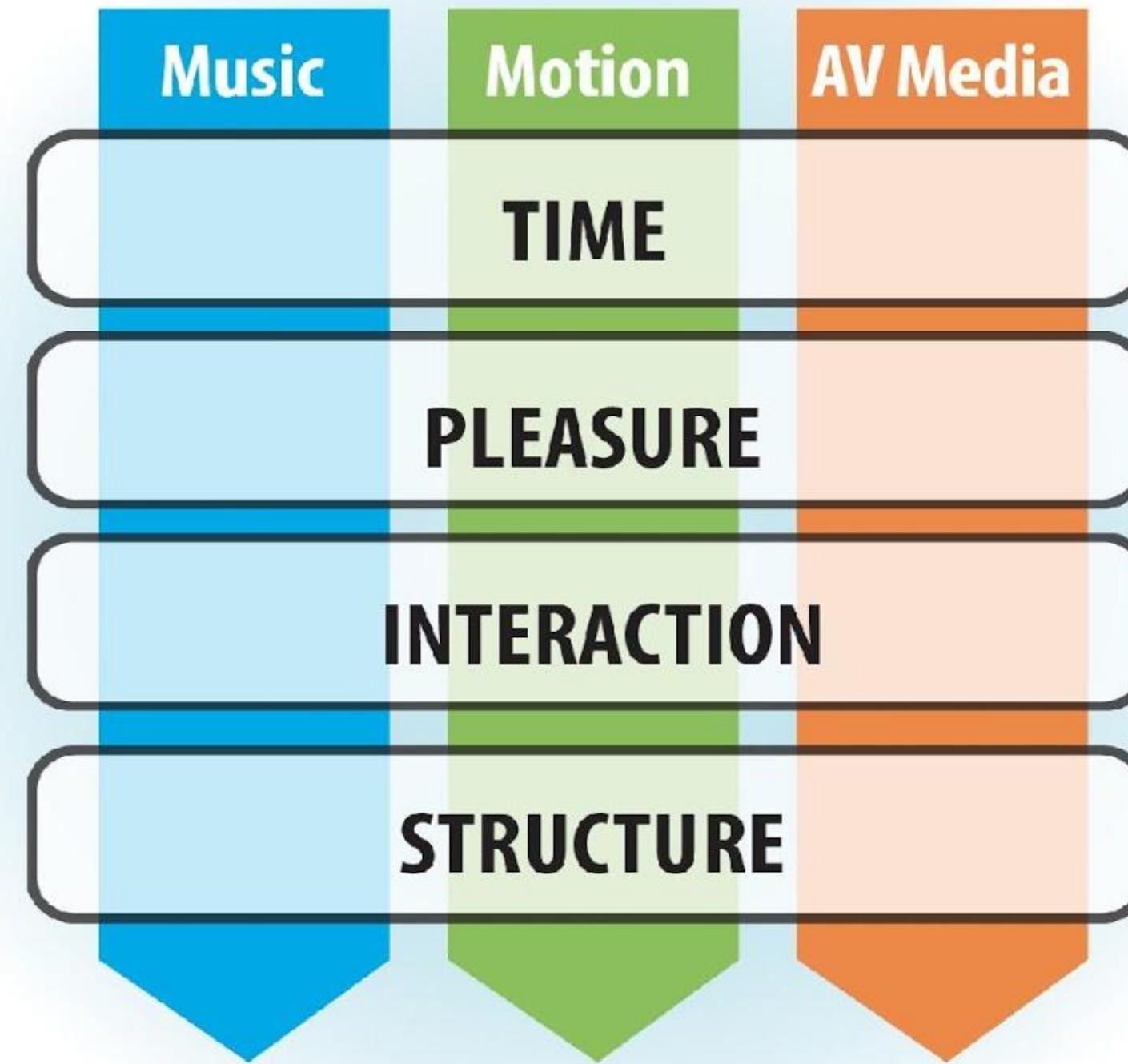




- Provide a comprehensive and interdisciplinary understanding of the perceptual and **cognitive mechanisms underlying** the human capacity to execute and experience **rhythm**.
  - Generate new insights into **rhythmic structures and features of music, human bodily motion and audiovisual media**.
  - Establish a **link** between the basic structures and features of **rhythmic phenomena in the world and within the (embodied) mind**.
  - Develop **new theoretical frameworks** for exploring the complexity of rhythmic processes in human life across disciplines

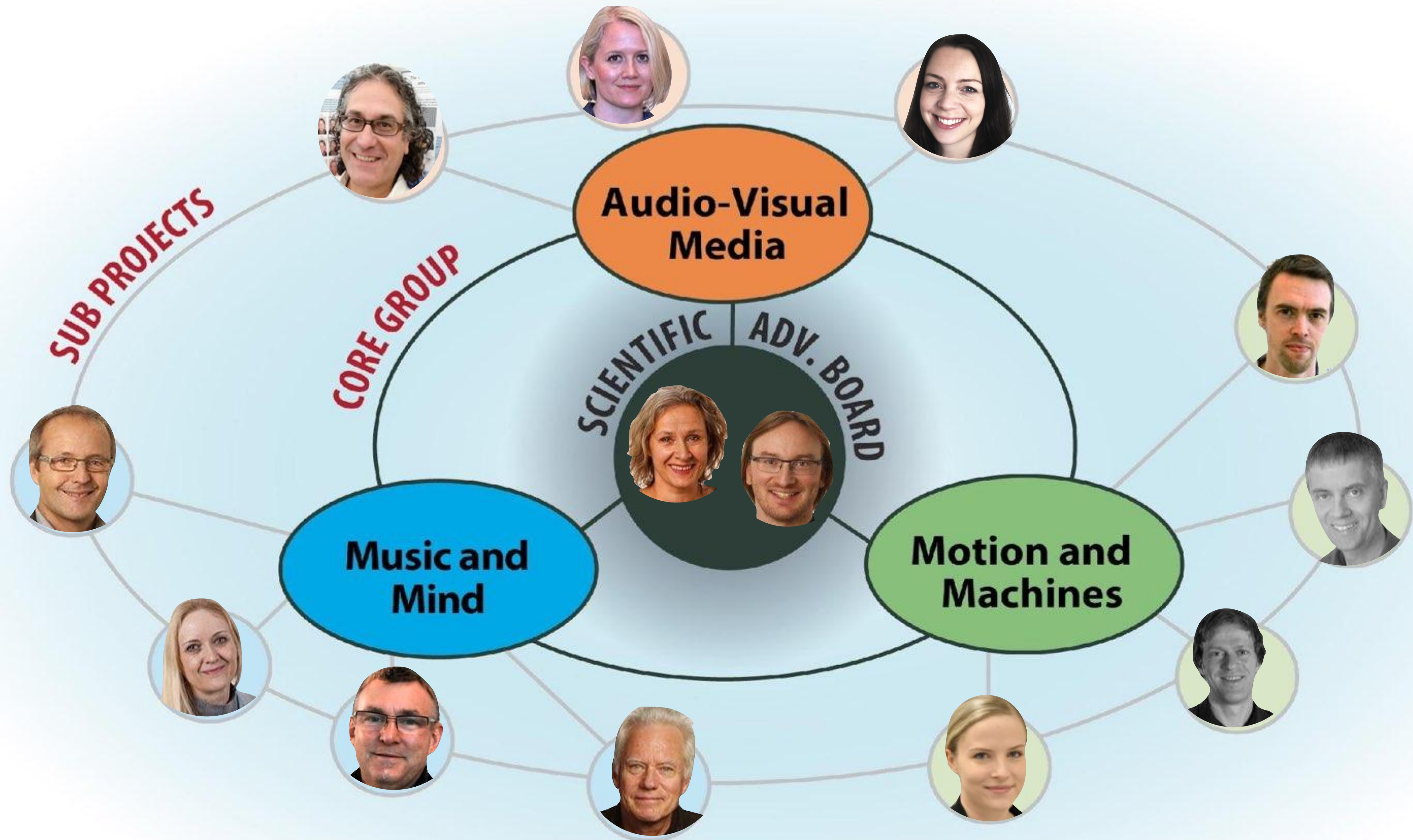


# HUMAN RHYTHM



**VISION:**  
**CHANGE OUR VIEW**  
**OF HUMAN COGNITION**







## Music & Mind

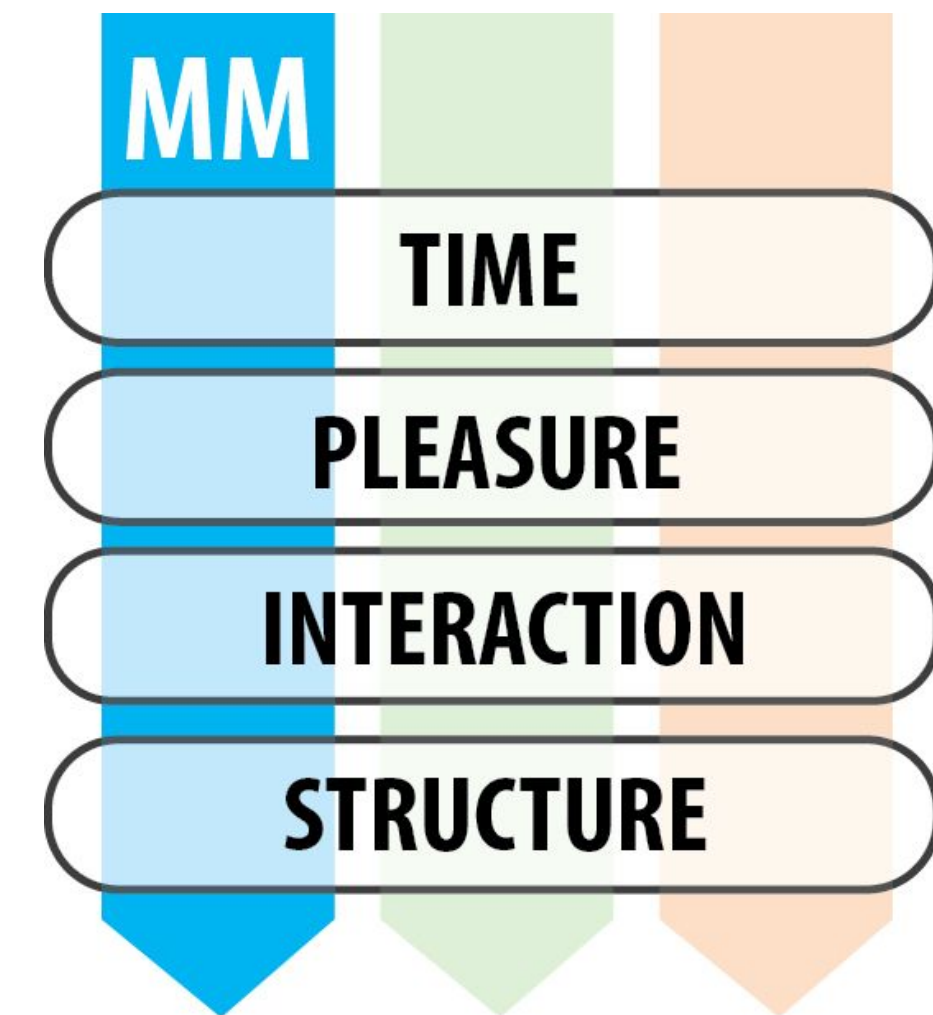
Analytical, interpretive and empirical work on rhythm as unfolding in the perceptual and cognitive 'now'.

Musicology (ethnomusicology, music theory/music analysis), aesthetics, psychology and neuroscience.

MM1: Time and form (PI: Erling Guldbrandsen)

MM2: Rhythm in the human brain (PI: Tor Endestad)

MM3: Musical micro-rhythm (PI: Anne Danielsen)





## Motion & Machine

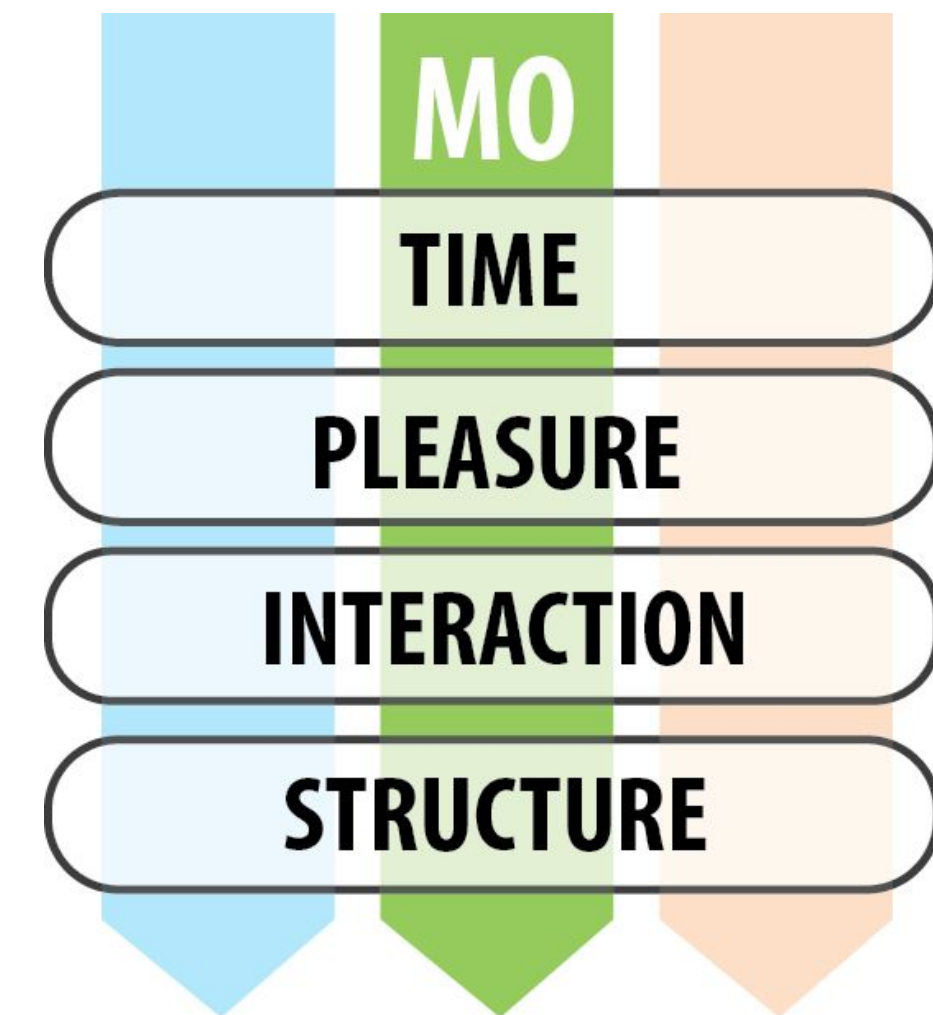
Theoretical modeling of rhythm, validated through empirical studies of human music-related body motion and simulation in machine-based systems (both computer simulation and robots).

Musicology, psychology and informatics.

MO1: Principles of rhythmic motion (PI: Kyrre Glette)

MO2: Rhythm in human motion (PI: A. R. Jensenius)

MO3: Rhythm and learning machines (PI: Jim Tørresen)





## Audiovisual Media

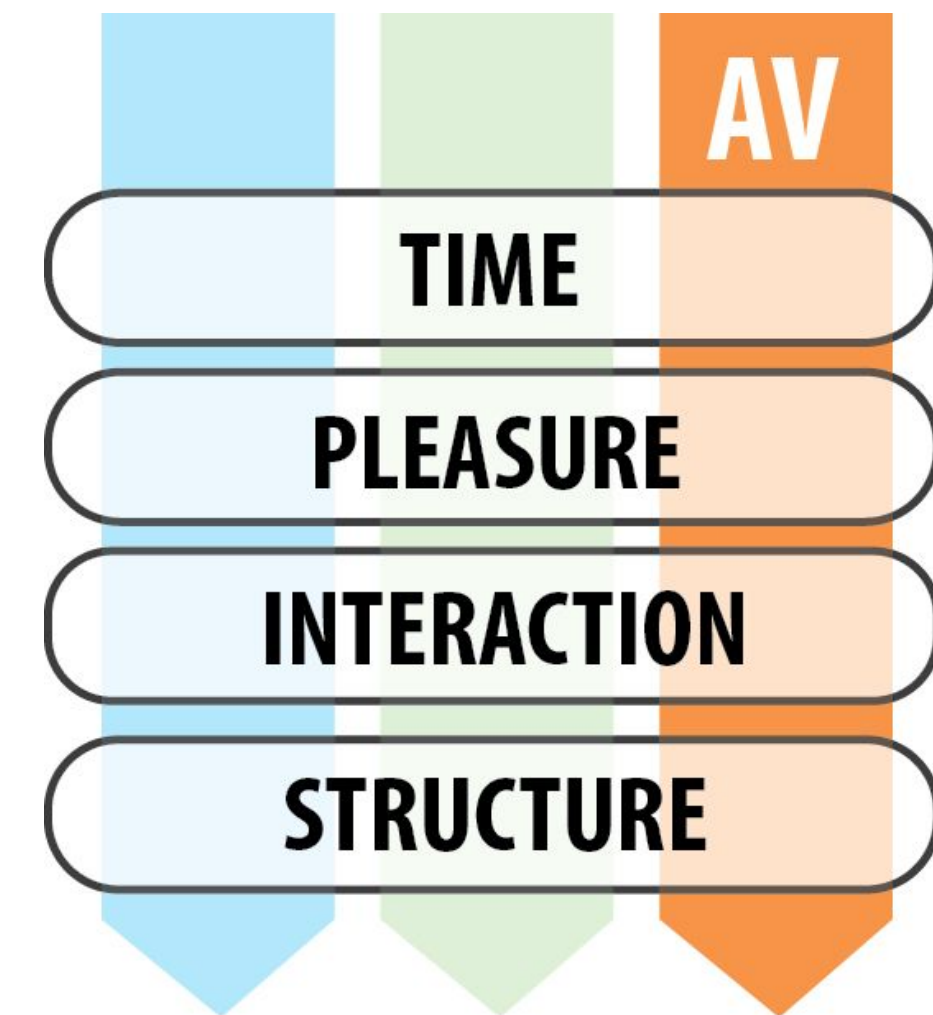
The role of rhythm in the experience of structure, temporality, pleasure and subjectivity in audiovisual aesthetics and contemporary immersive media practices.

Musicology, media and technology studies, psychology, sociology, philosophy and film studies.

AV1: Cross-modal rhythms (PI: Bruno Laeng)

AV2: Remixing time (PI: Ragnhild Brøvig-Hanssen)

AV3: Engagement and immersion (PI: Nanette Nielsen)





## Psychology



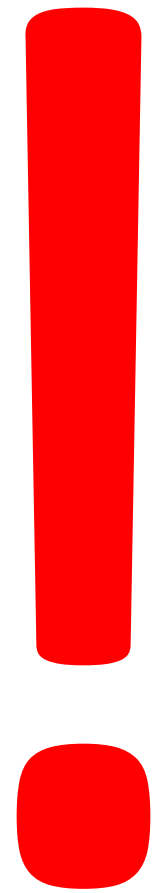
## Informatics



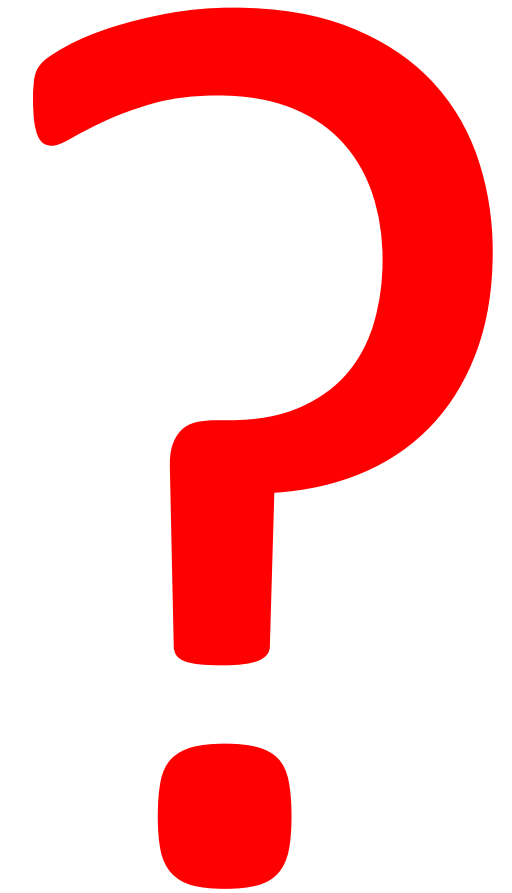
## Musicology



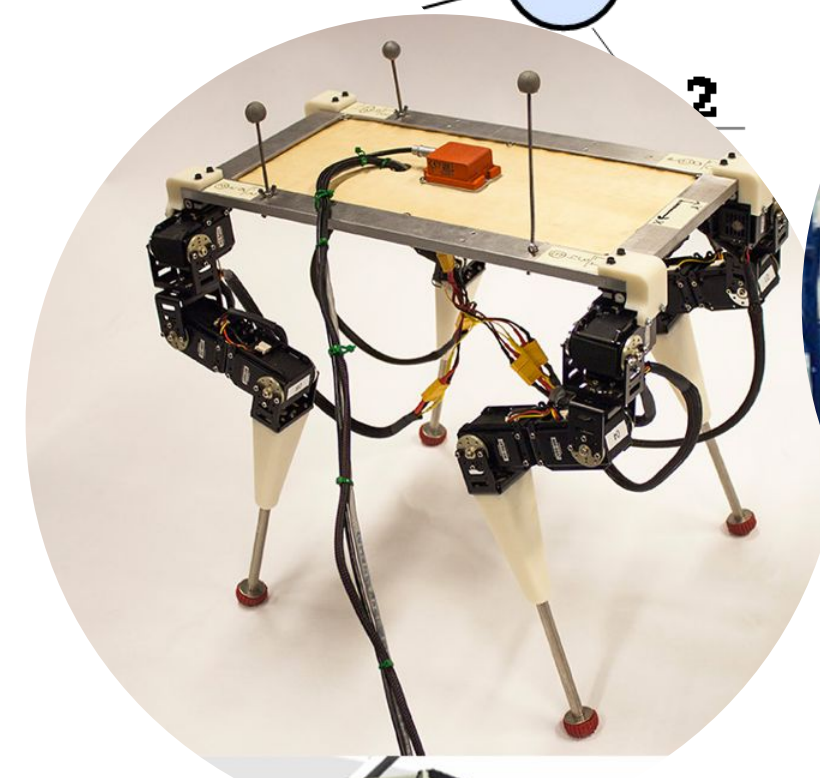
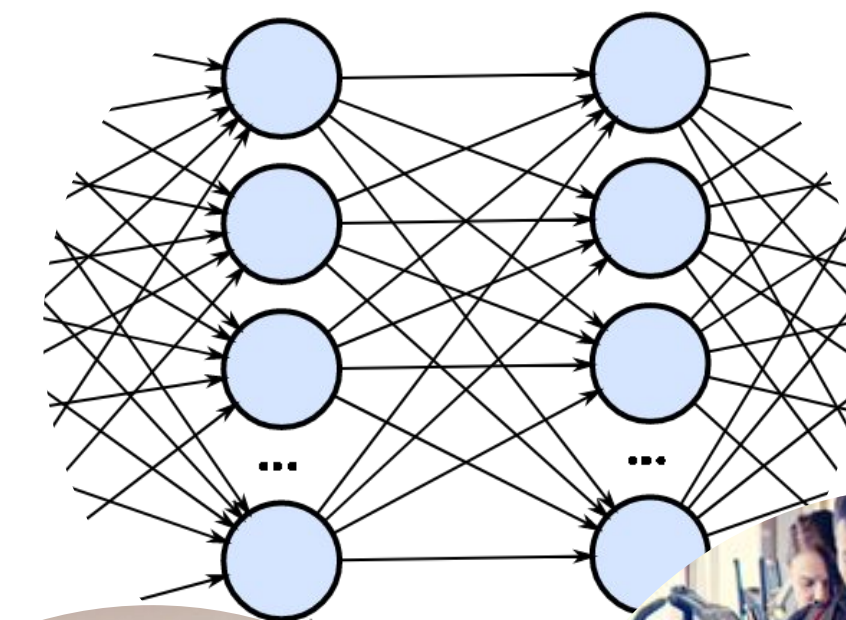
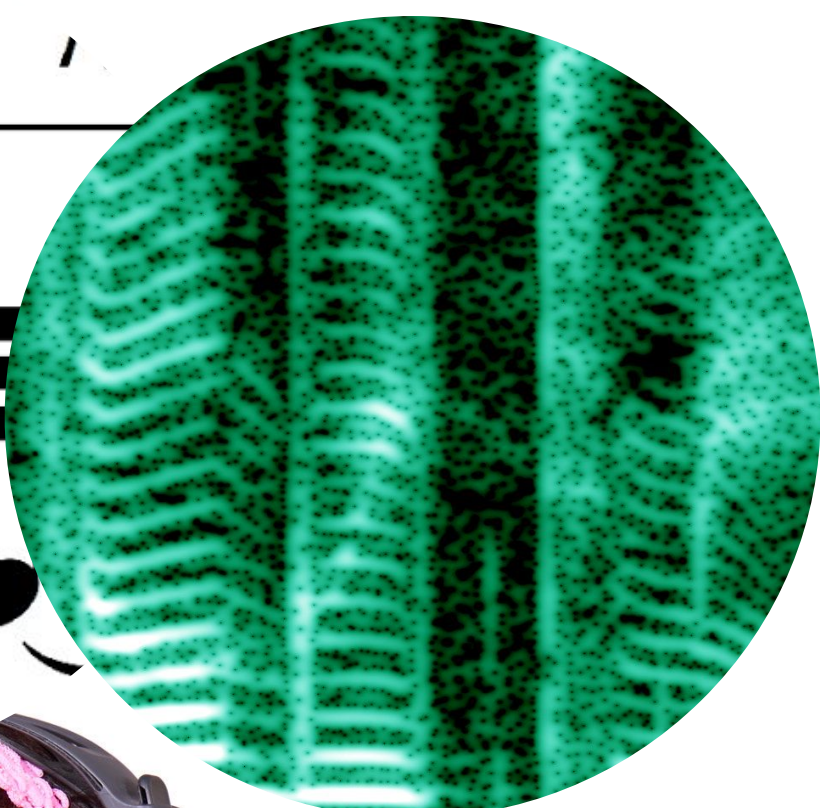
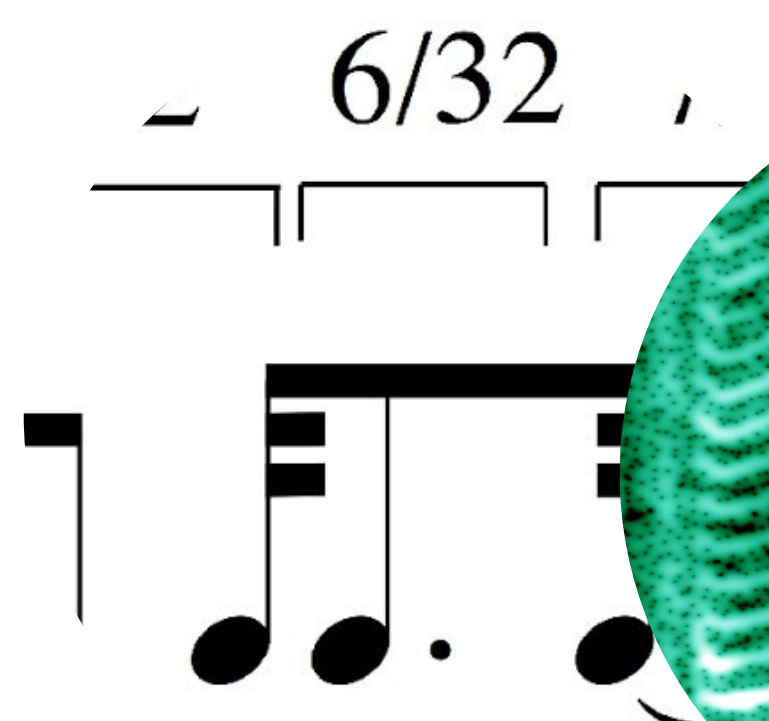
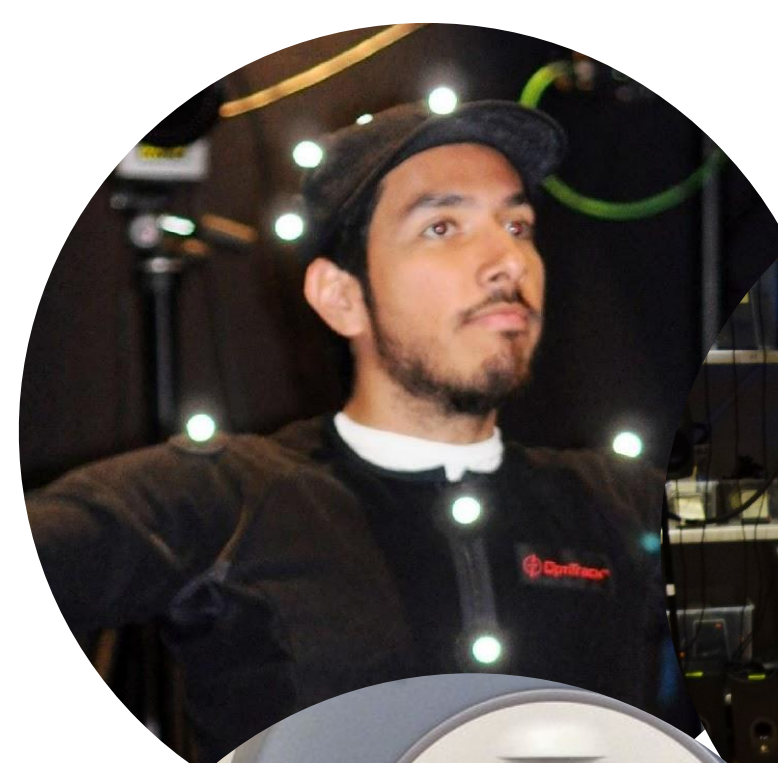
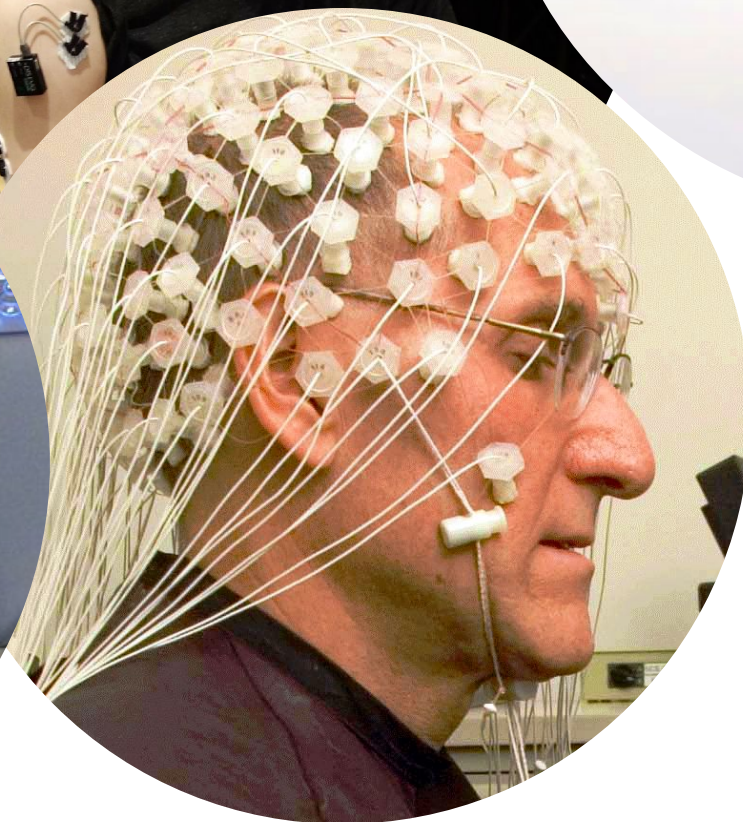
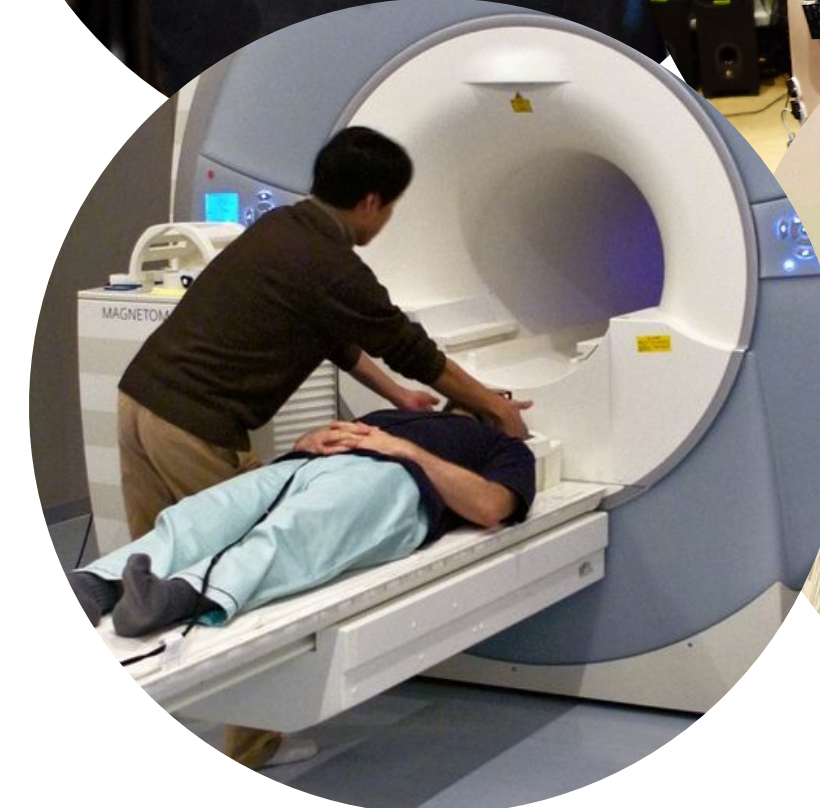
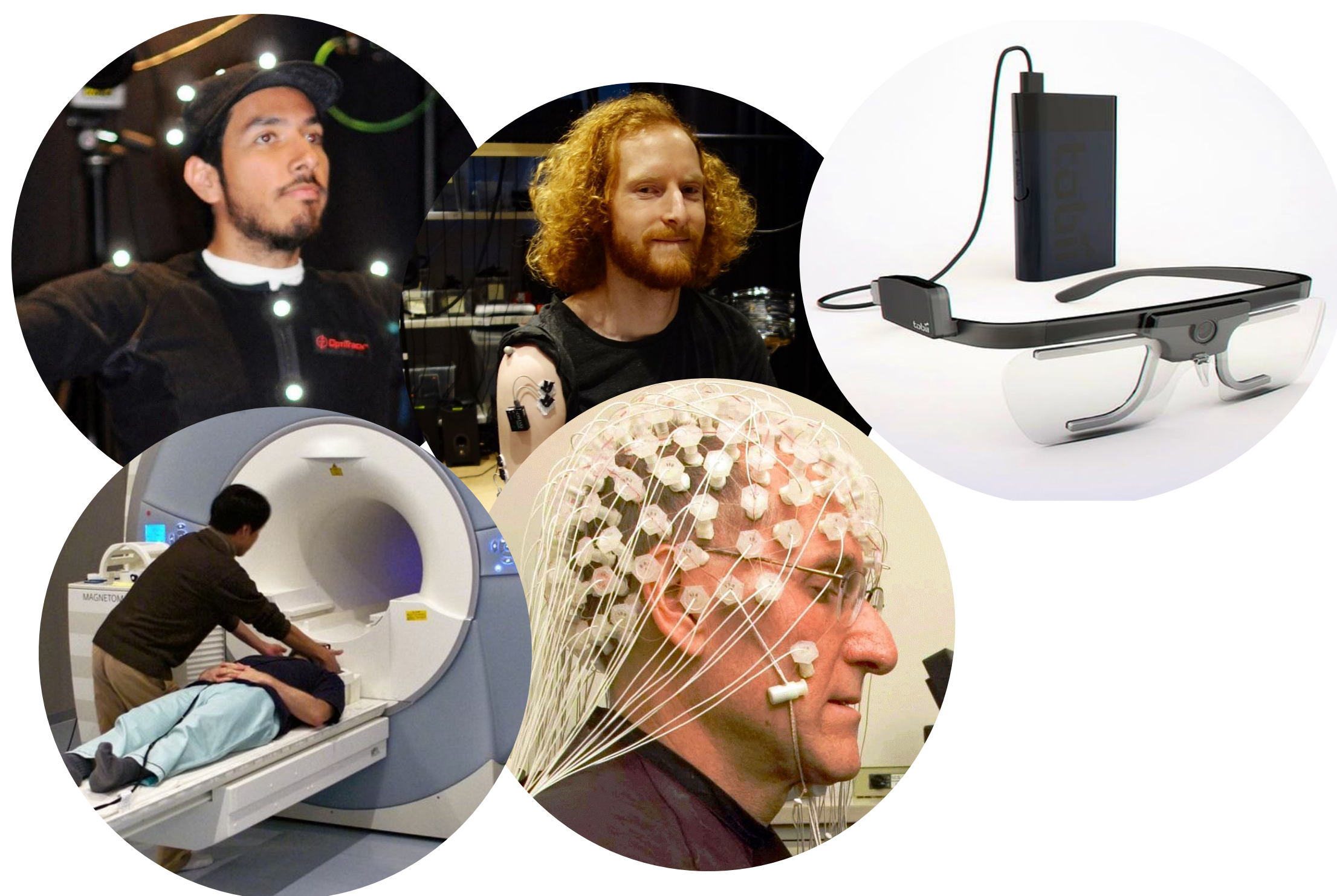




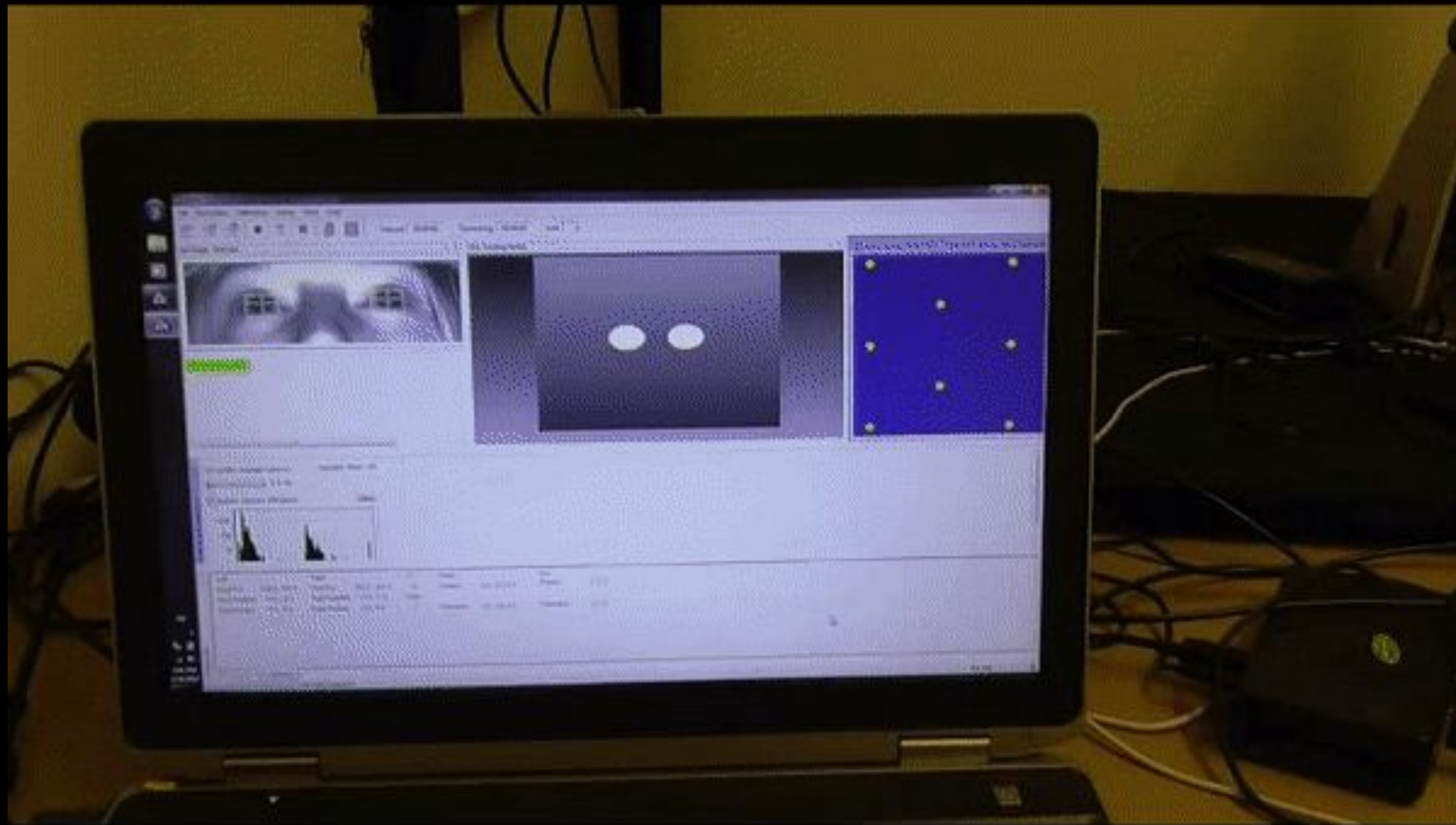
Interdisciplinarity











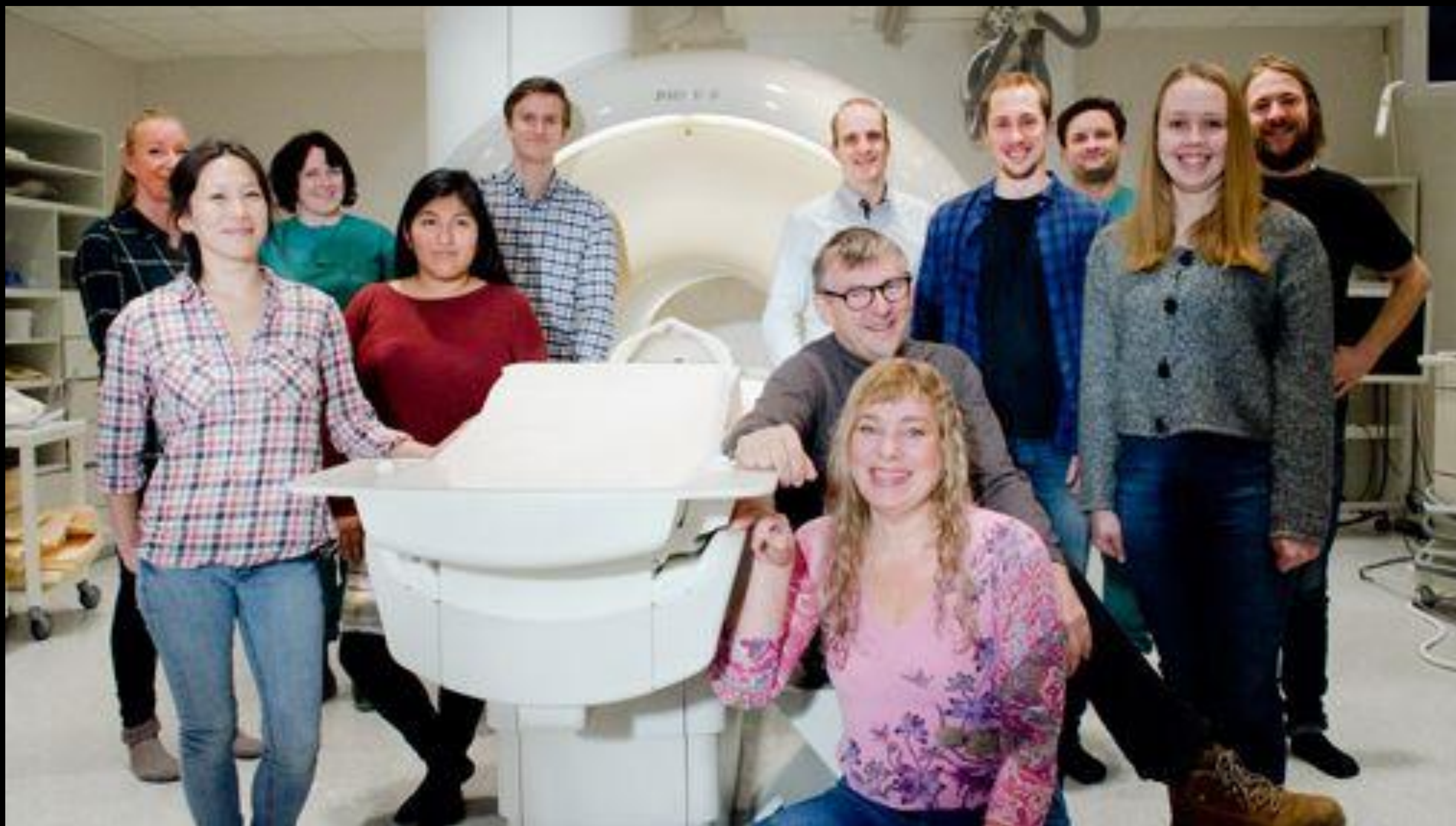
Eye tracking & pupillometry





EEG + intracranial EEG











fourMs lab







Performer motion







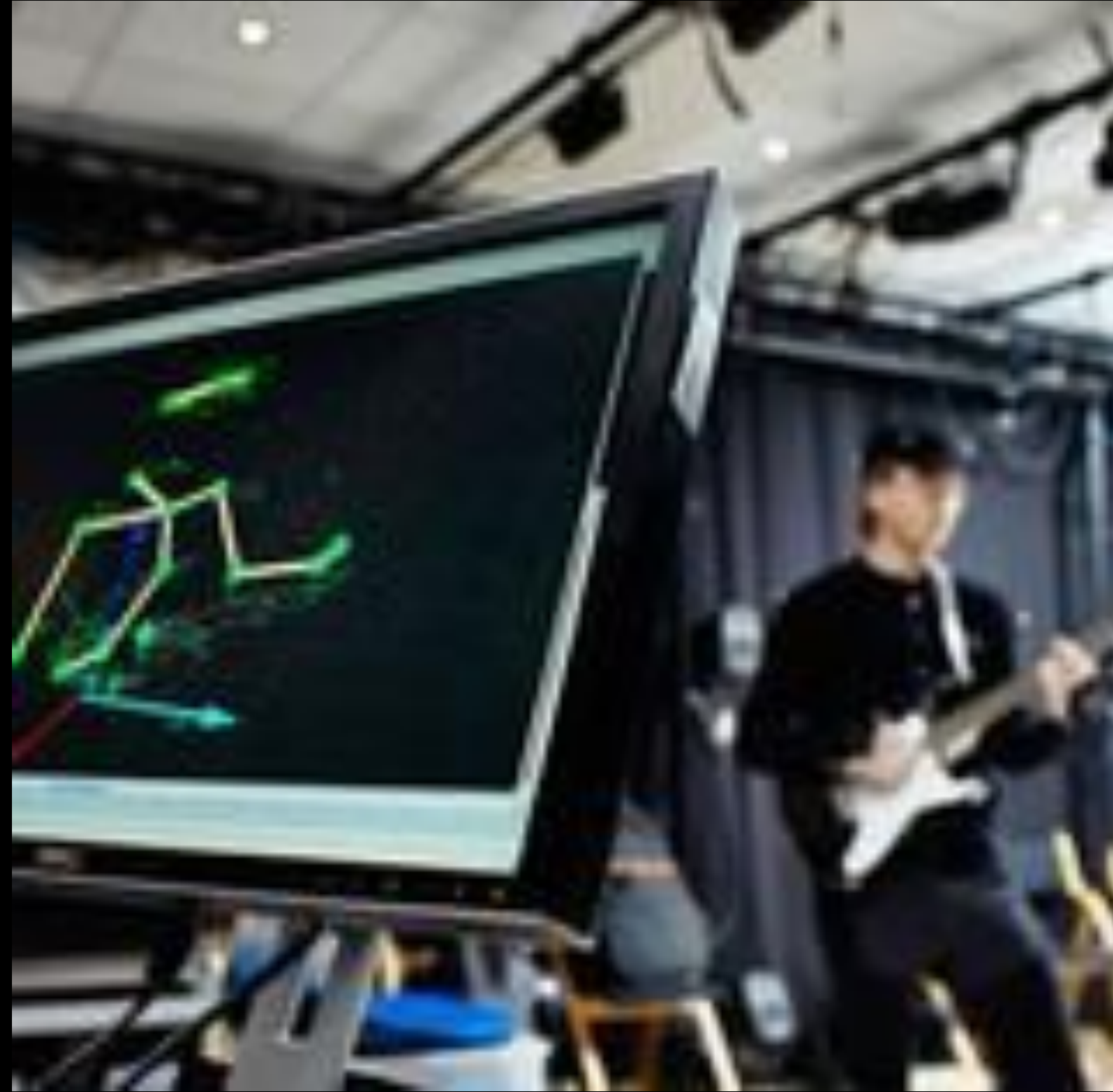


EMG



Performance imitation - “air instrument performance”

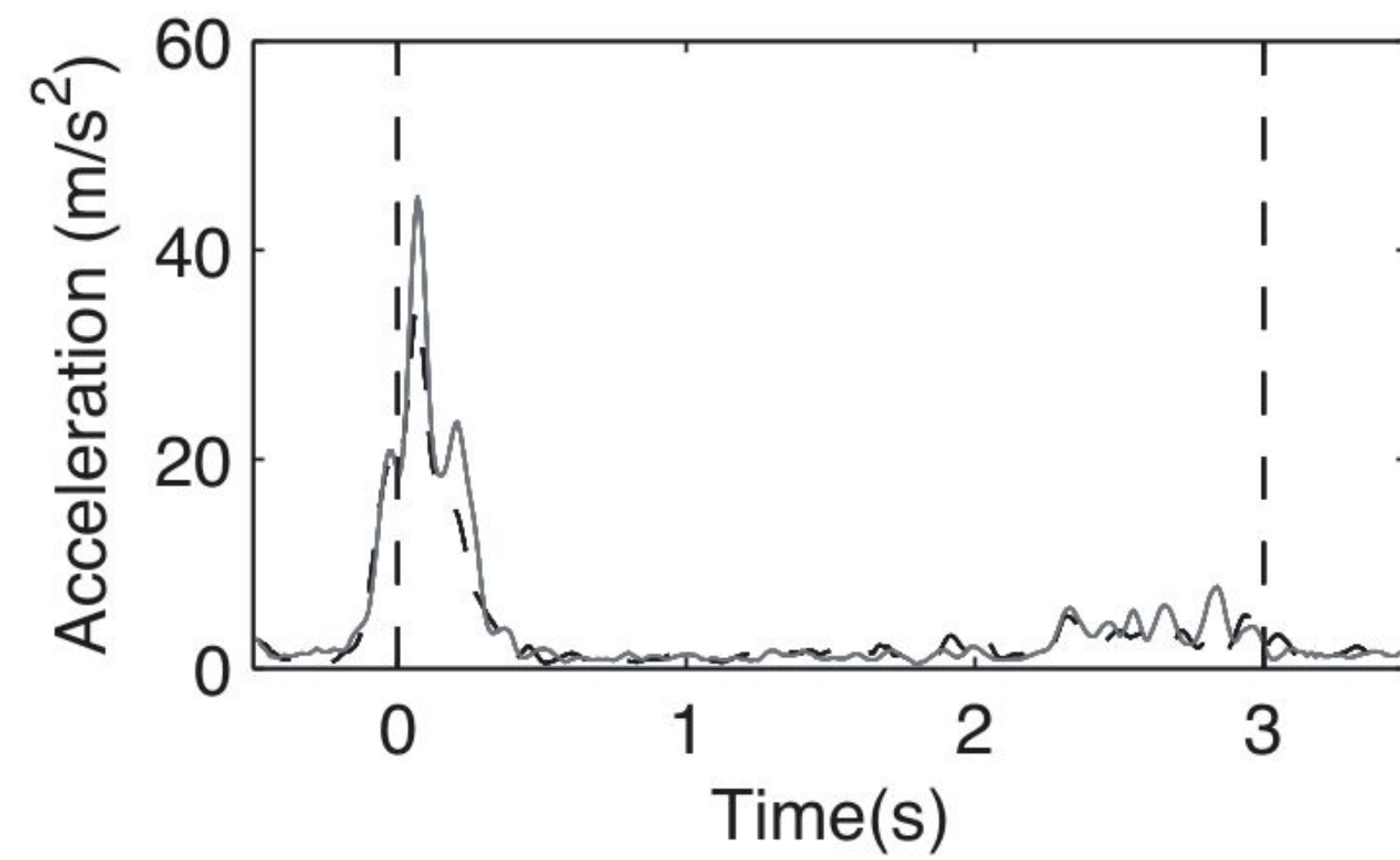
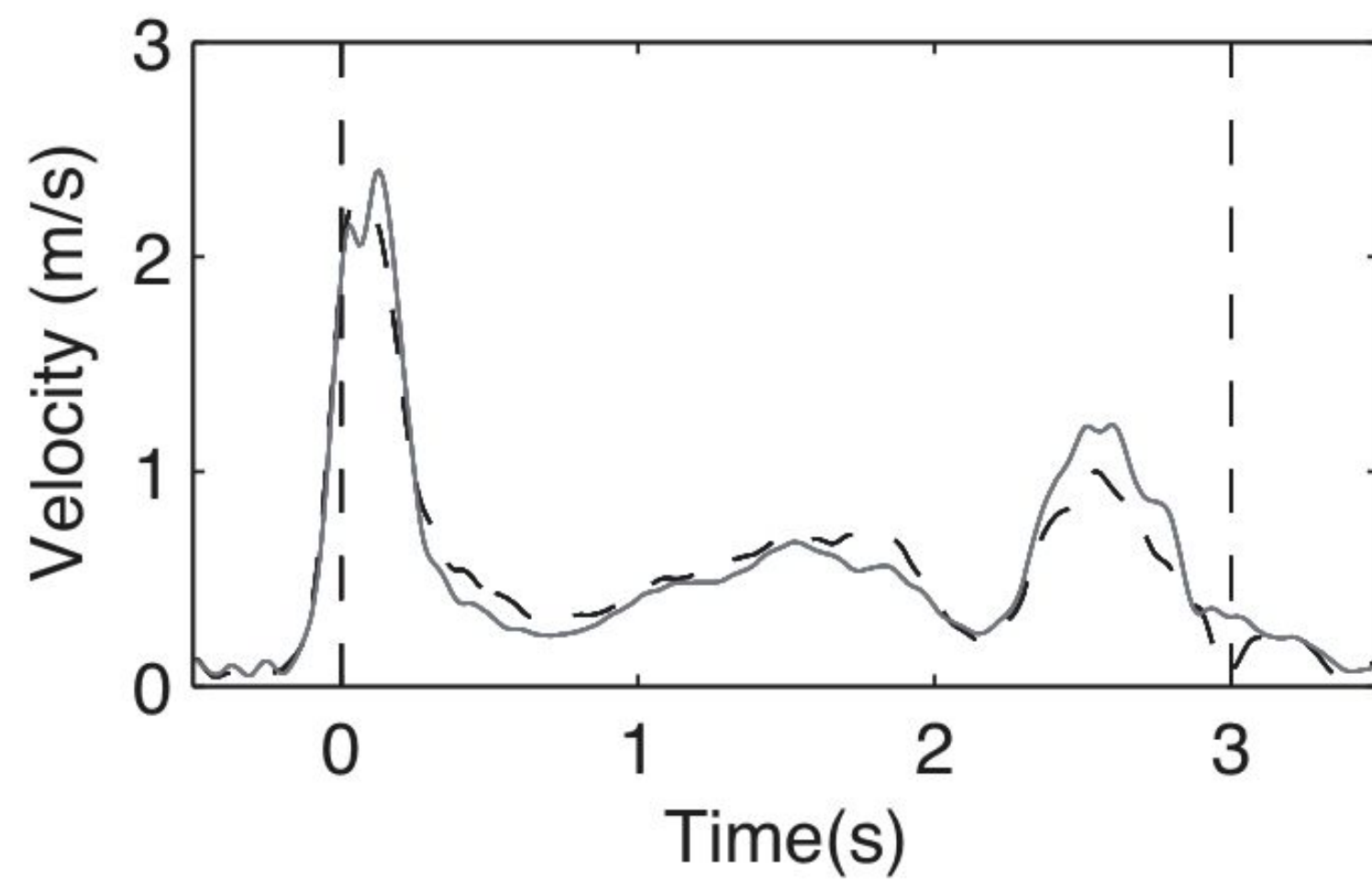
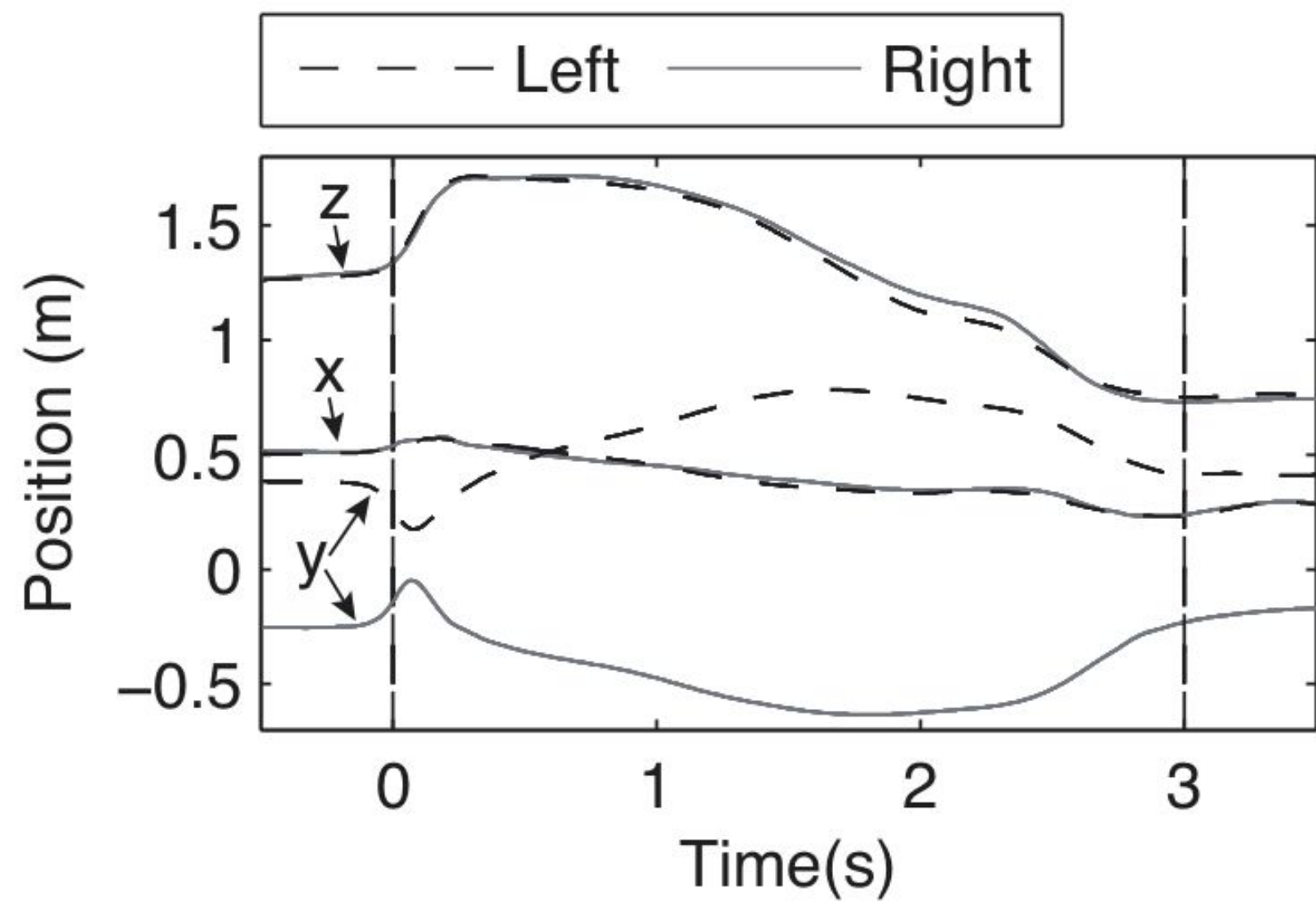




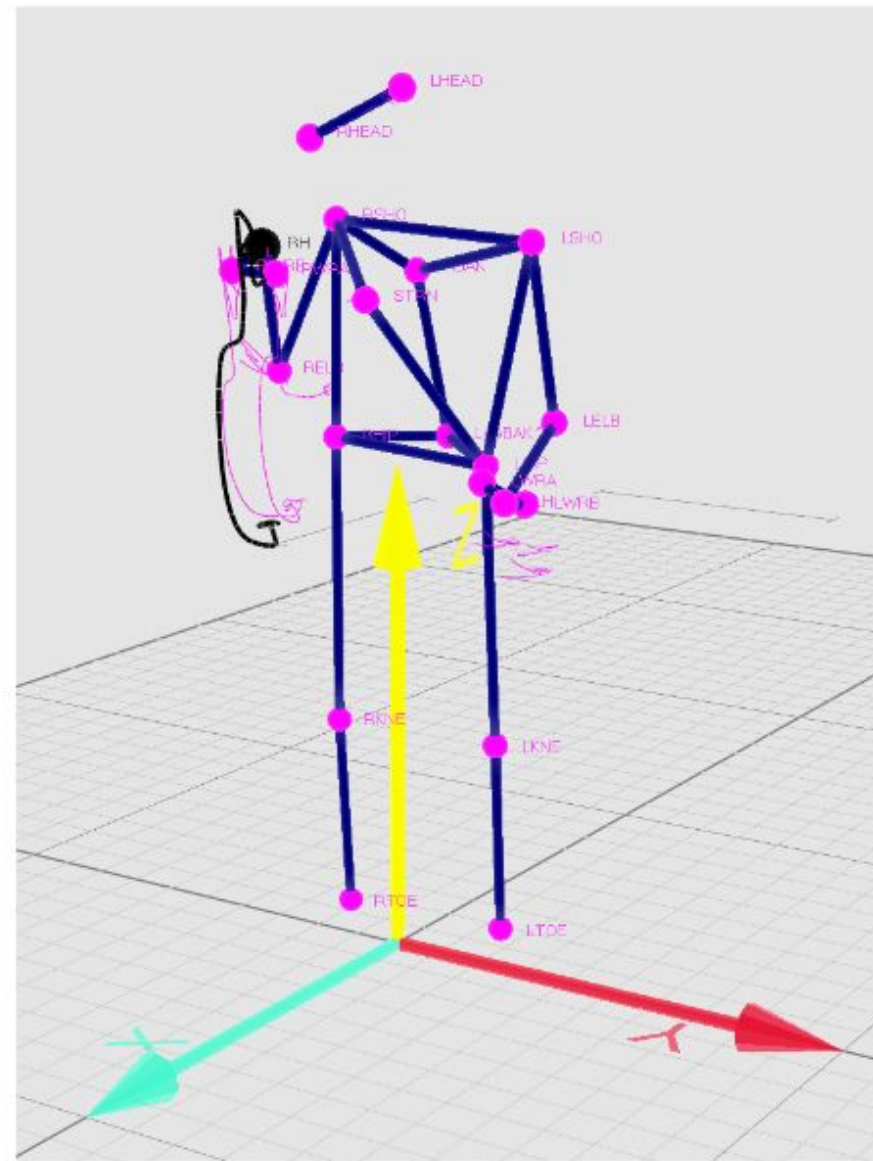


Sound-tracing

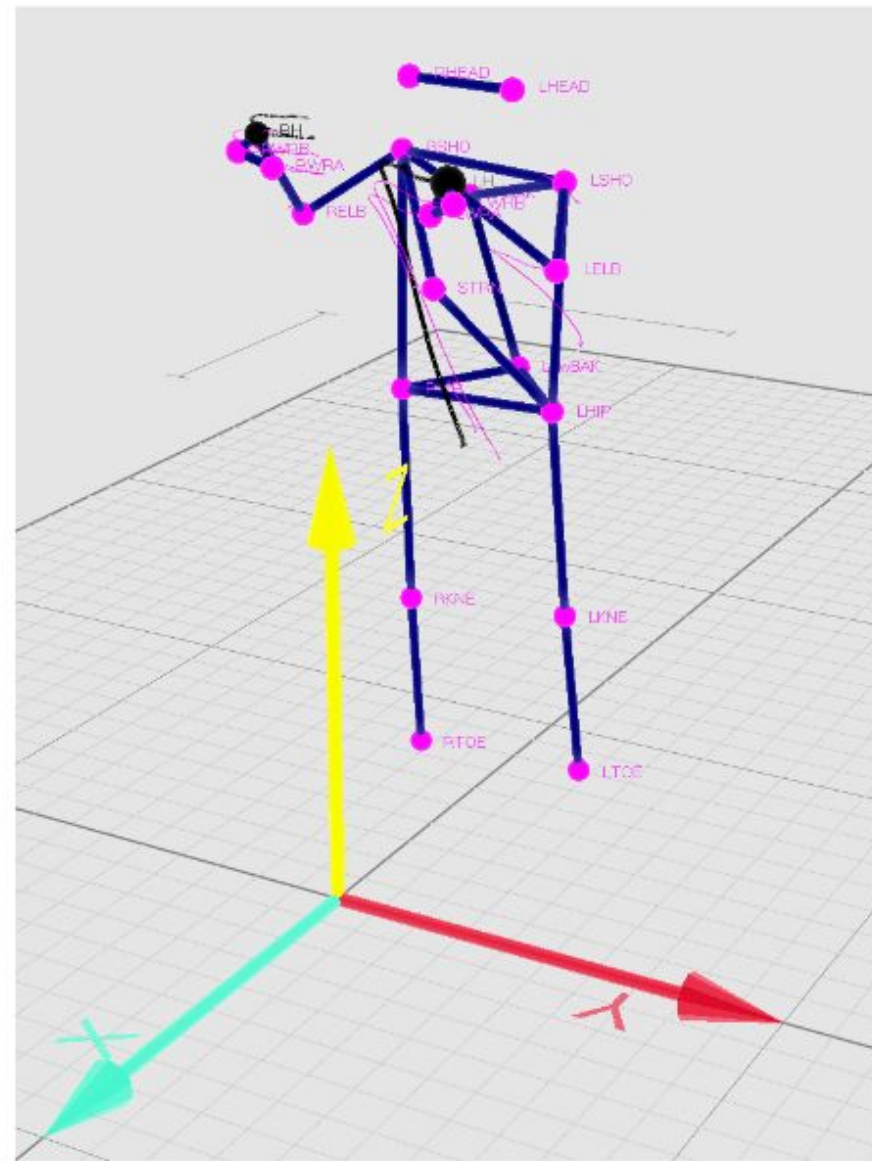




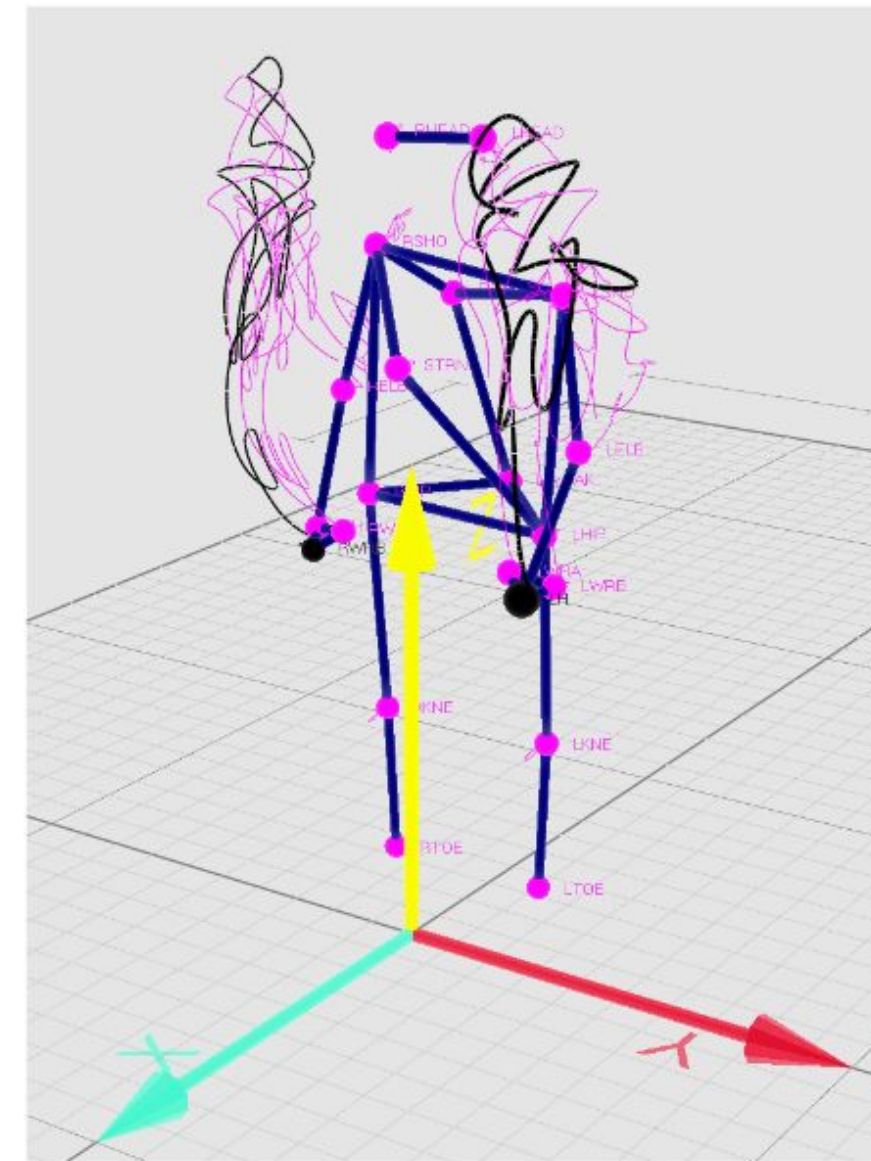




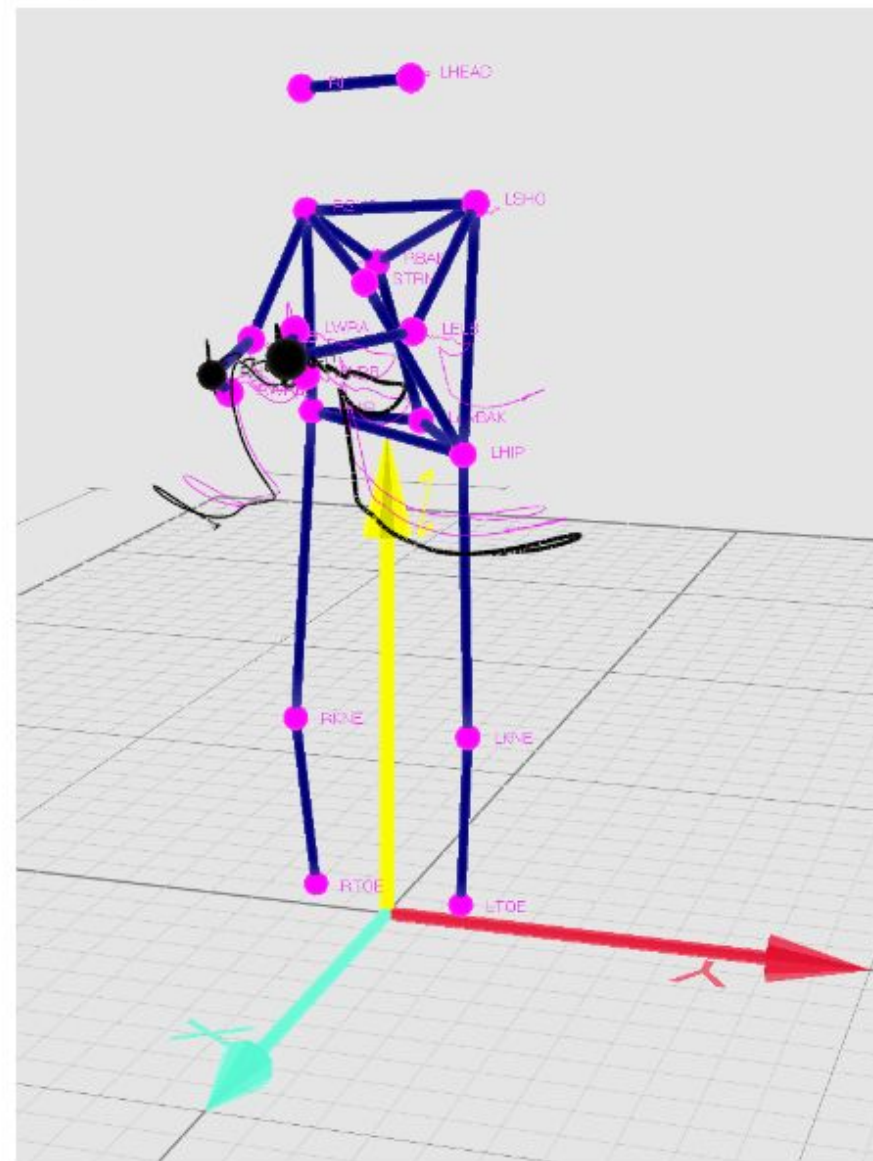
(1) Dominant hand



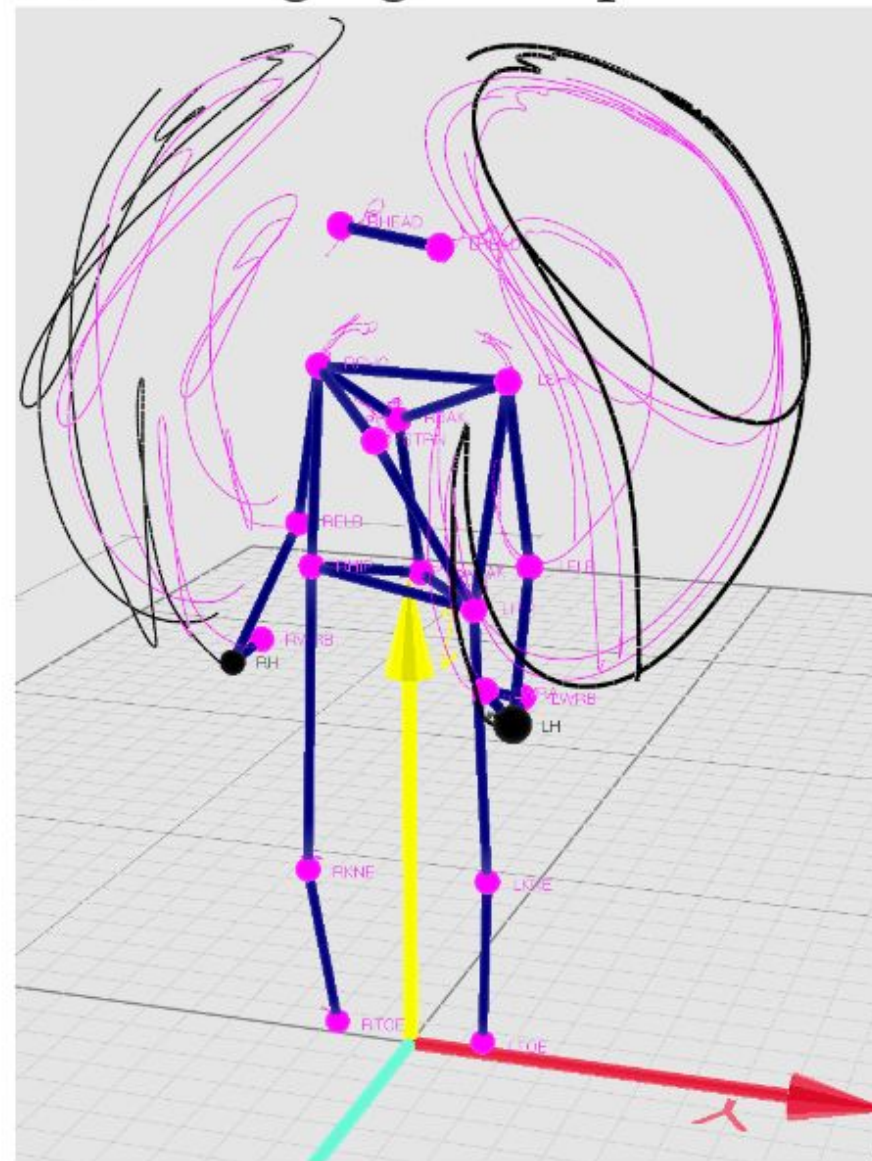
(2) Changing inter-palm distance



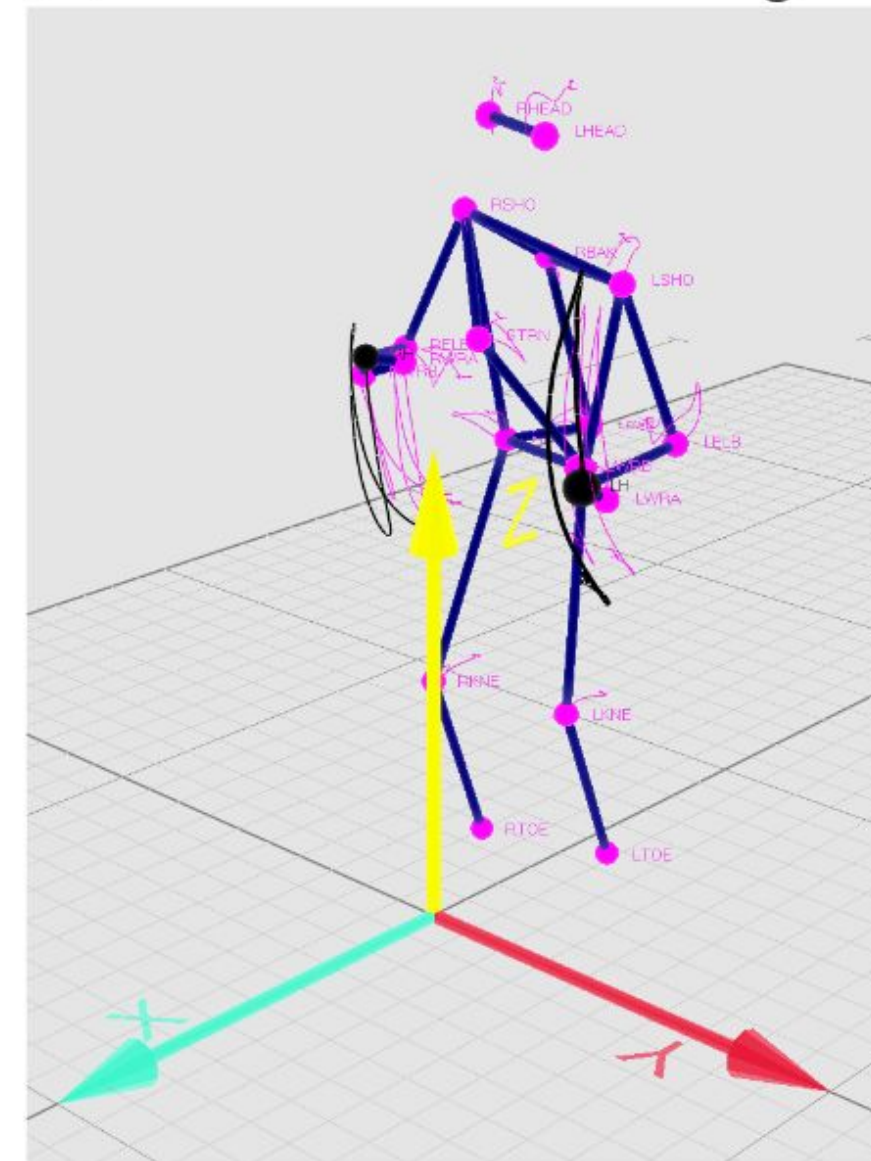
(3) Hands as mirror images



(4) Manipulating small objects



(5) Drawing arcs along circles



(6) Asymmetric percussive action



Dance motion

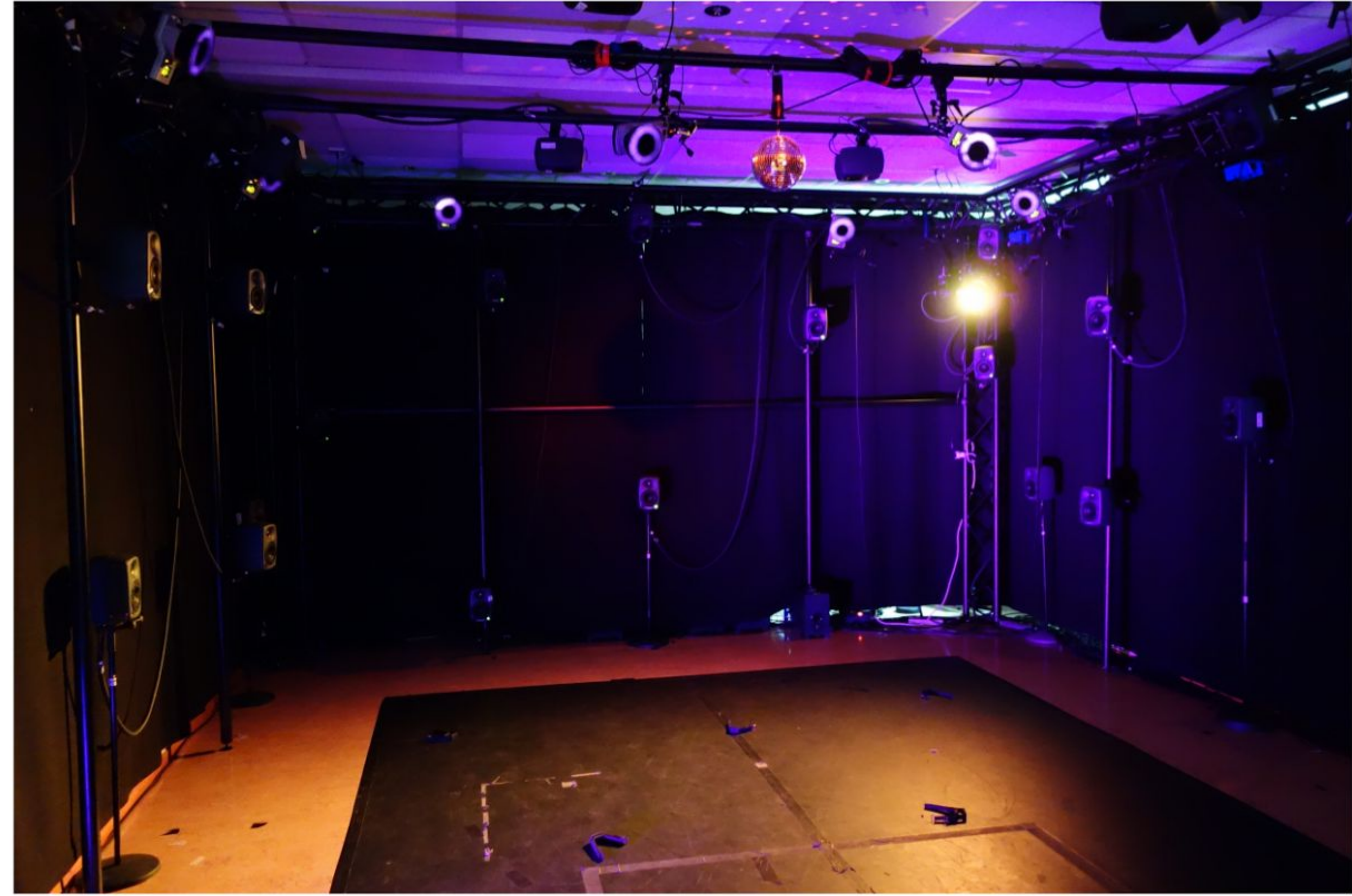
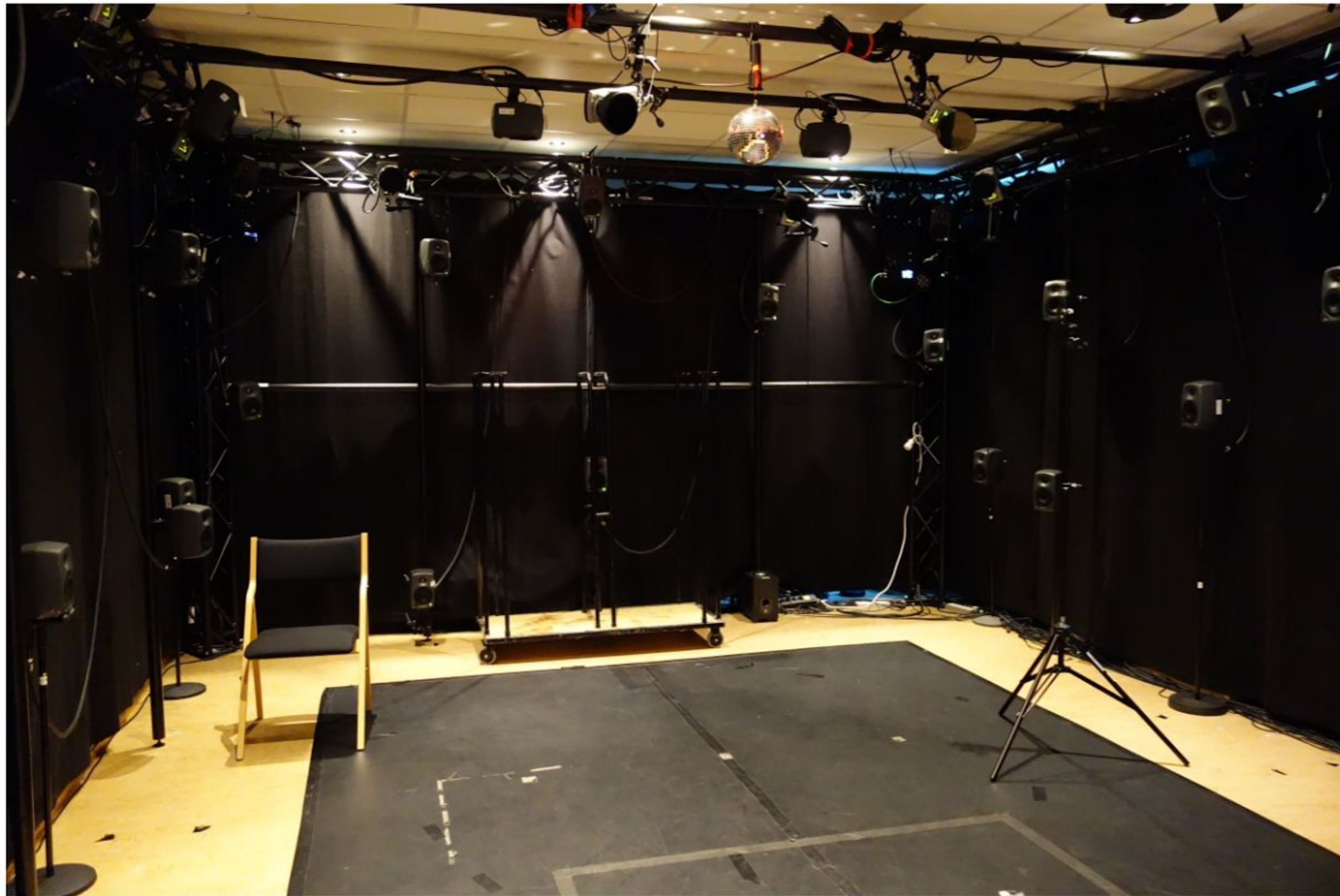






Group dancing



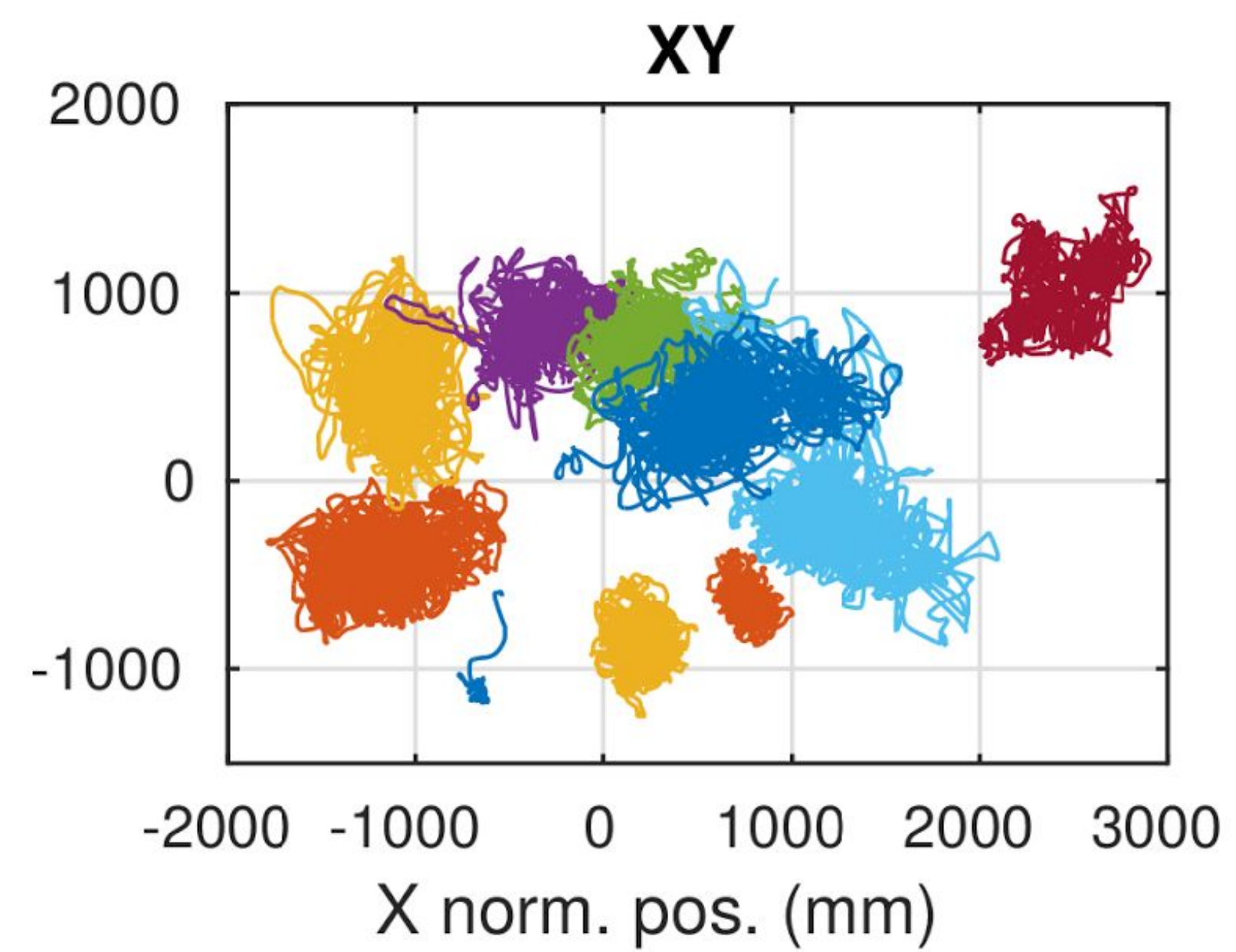
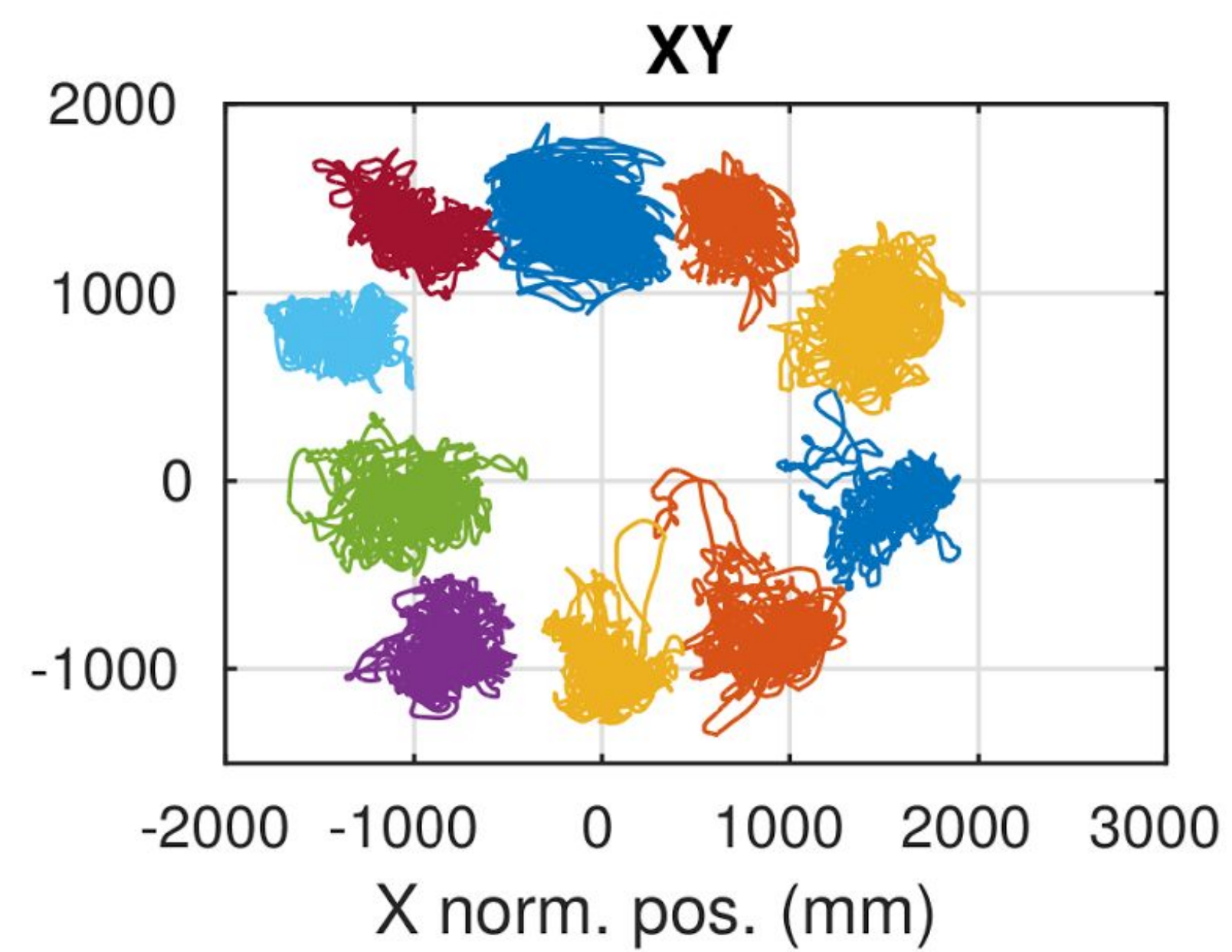
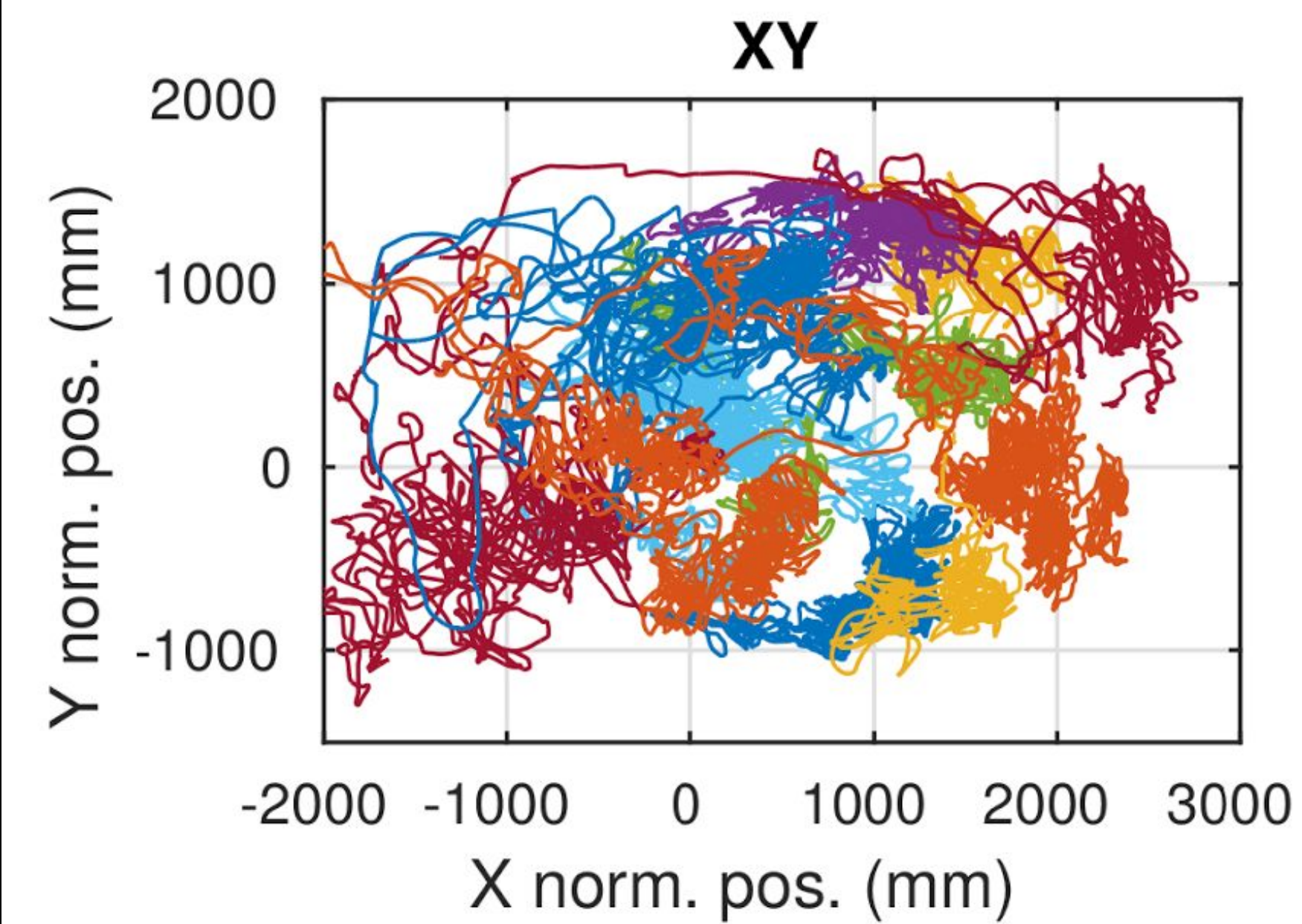


Solberg, Jensenius (2016). **Pleasurable and Intersubjectively Embodied Experiences of Electronic Dance Music.** *Empirical Musicology Review*



Handwritten text in a cursive script, possibly a letter or a page from a manuscript. The text is arranged in several lines and is written in a dark ink on a light-colored paper. The handwriting is fluid and somewhat slanted, characteristic of a cursive style. The text is mostly illegible due to the image quality and the slant of the writing.







Emotion







Standstill





A-1

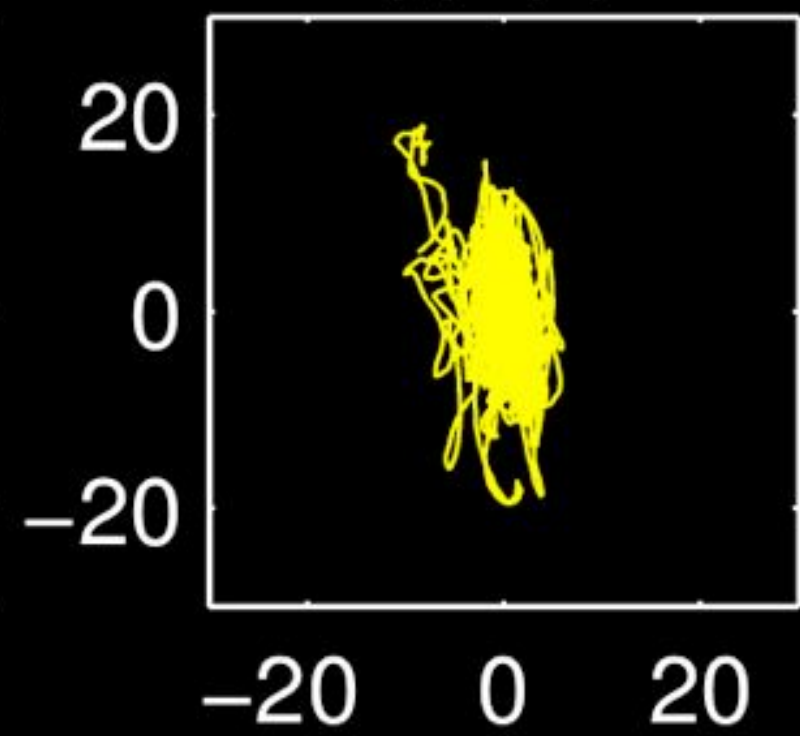
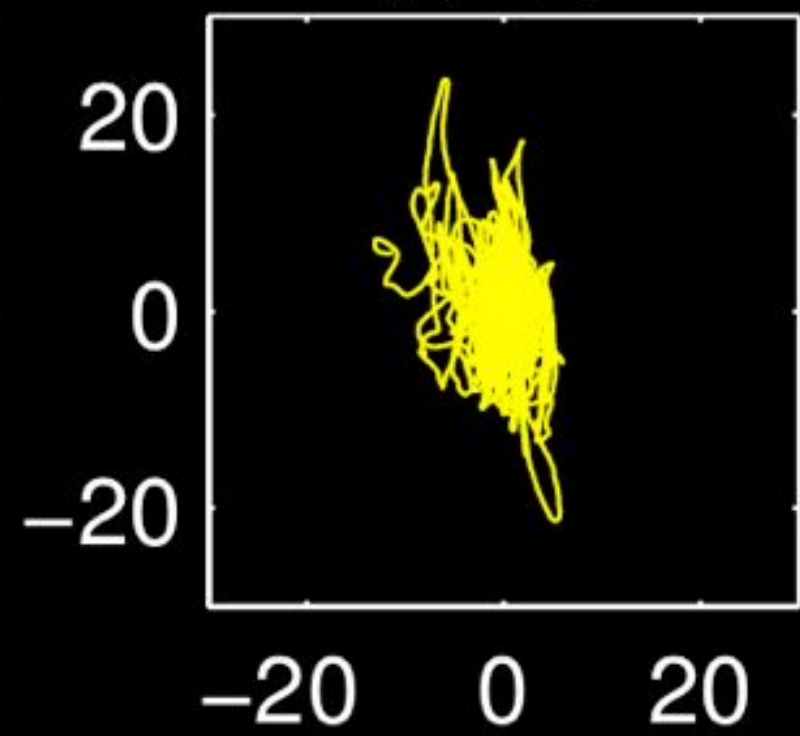
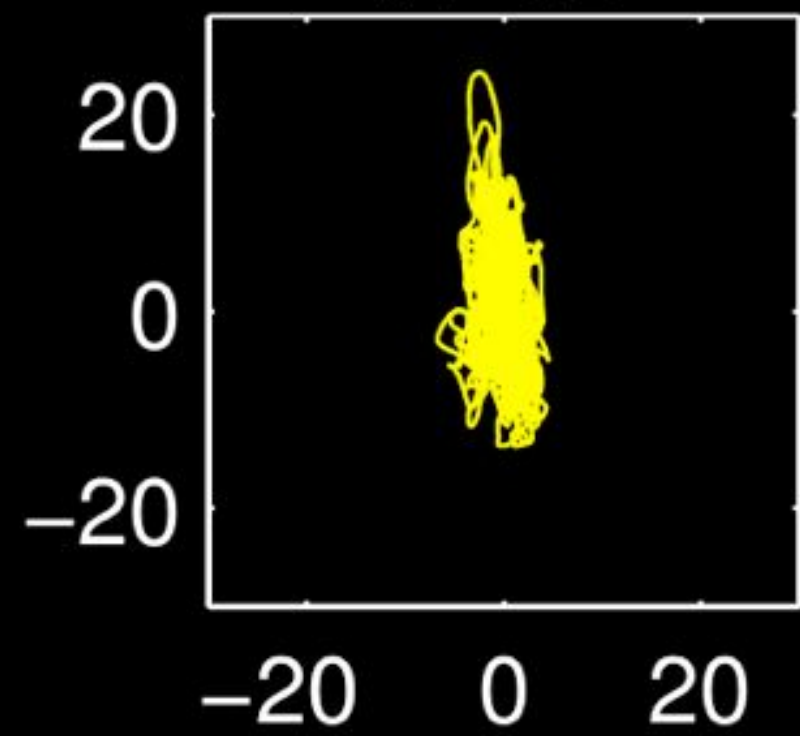
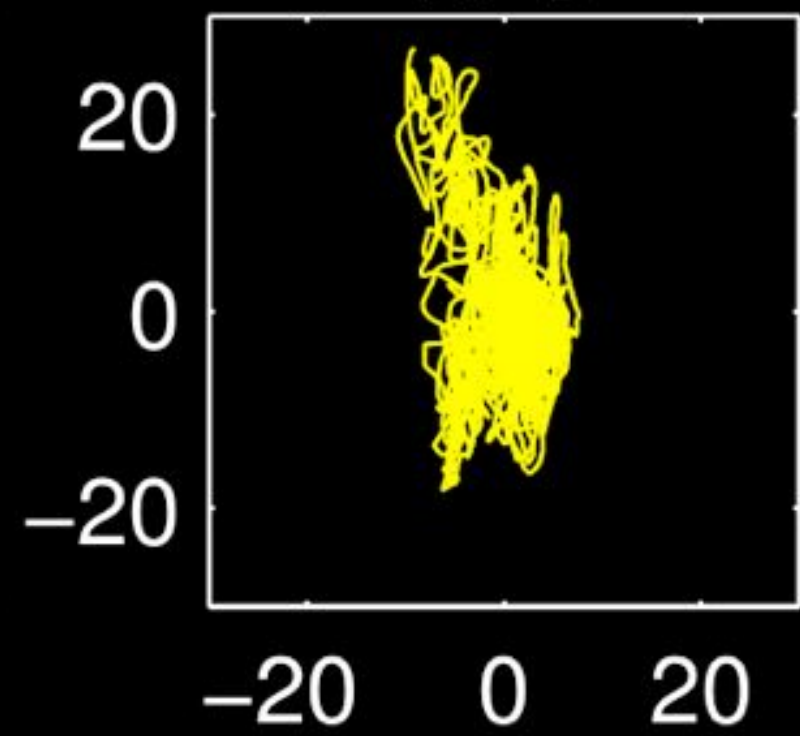
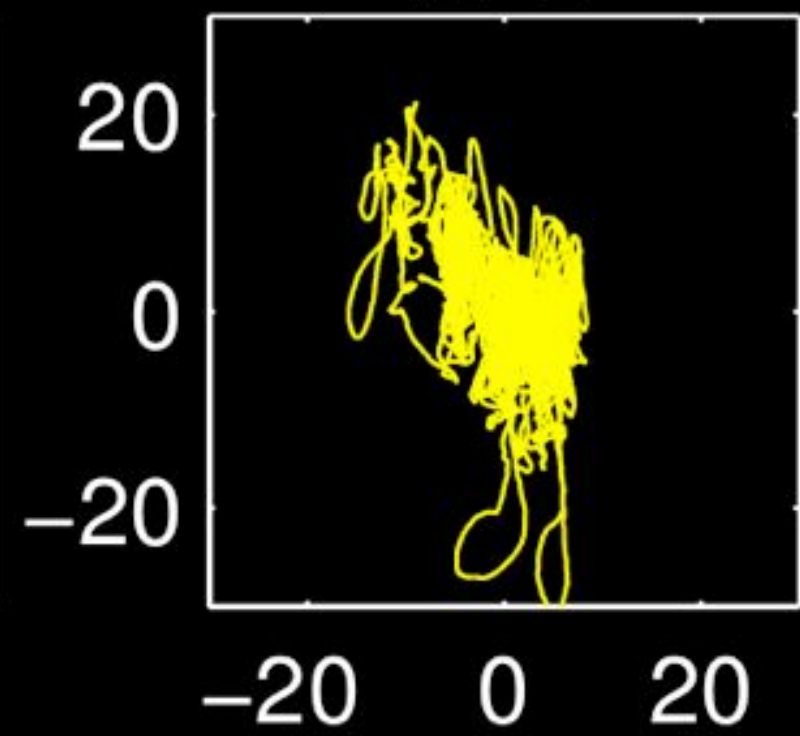
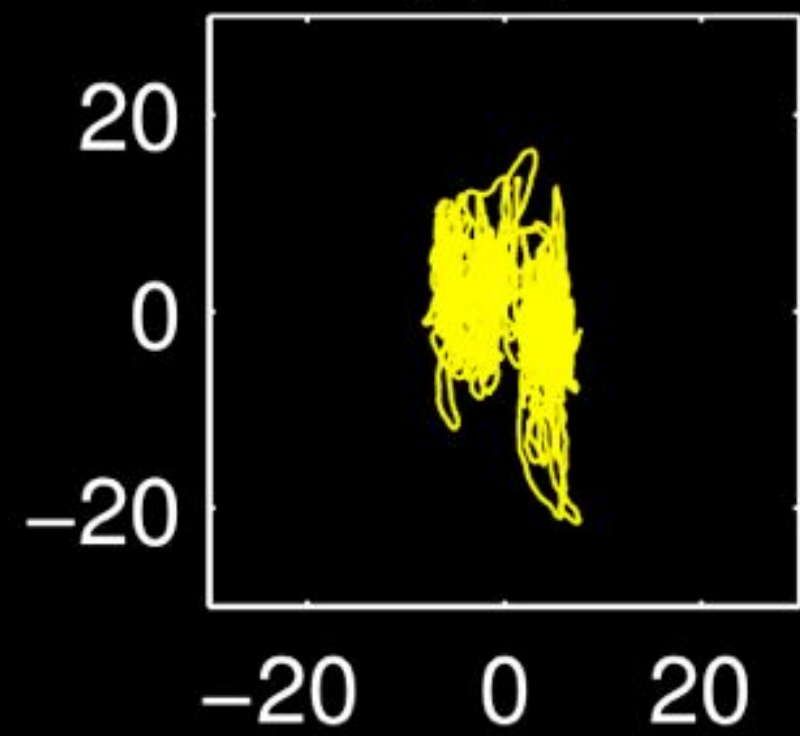
A-2

A-3

A-12

A-13

A-14



KA-1

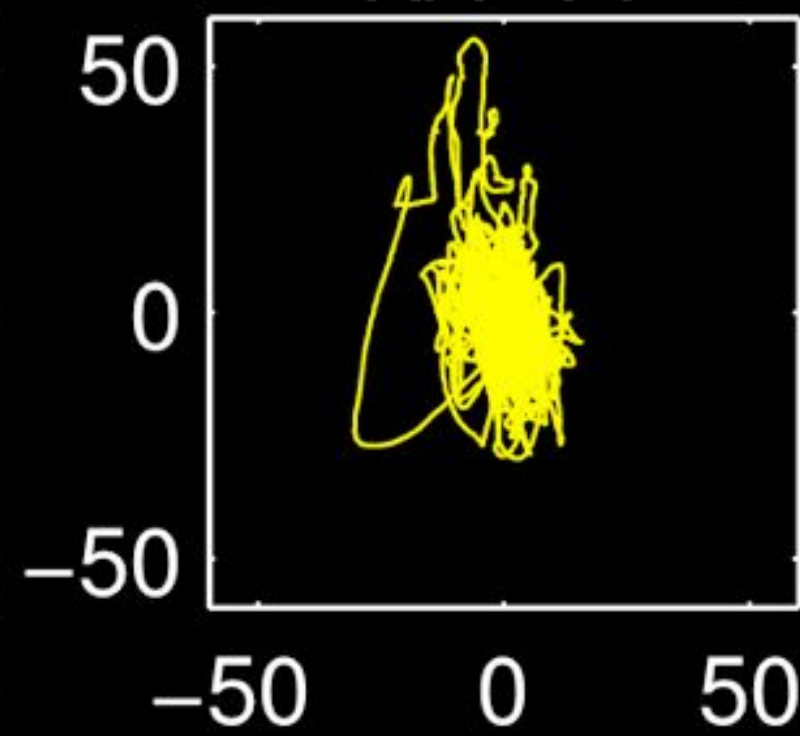
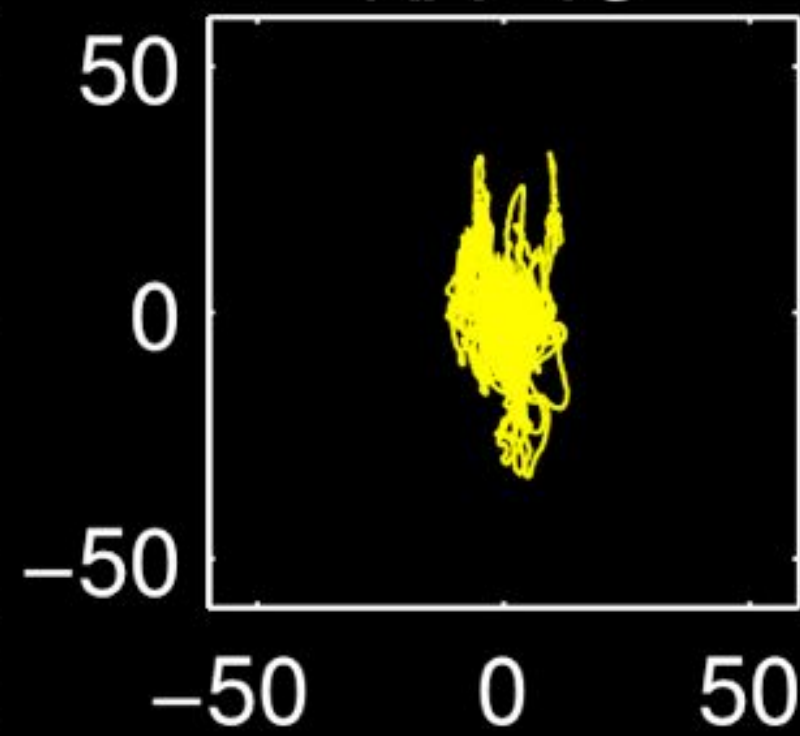
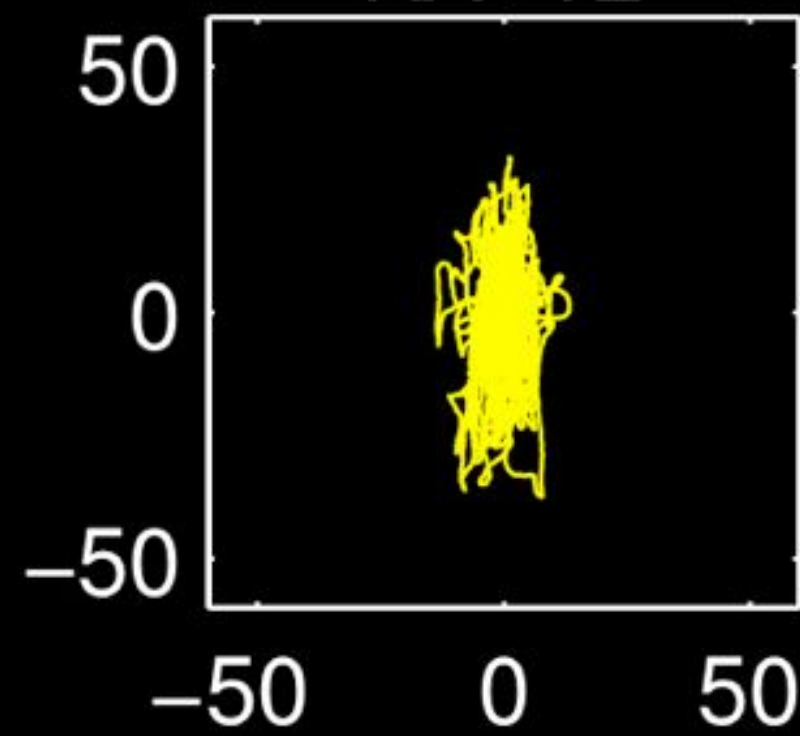
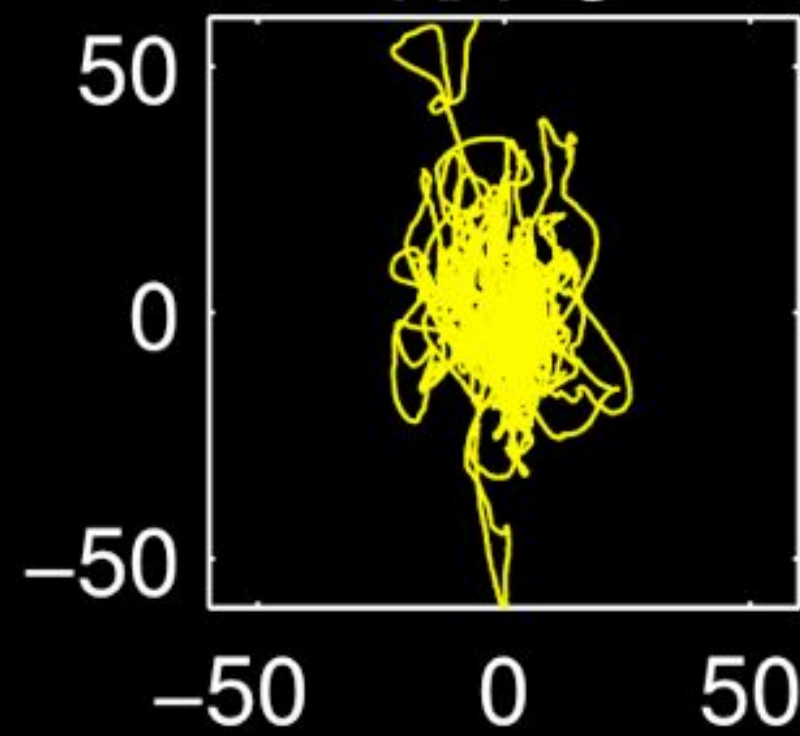
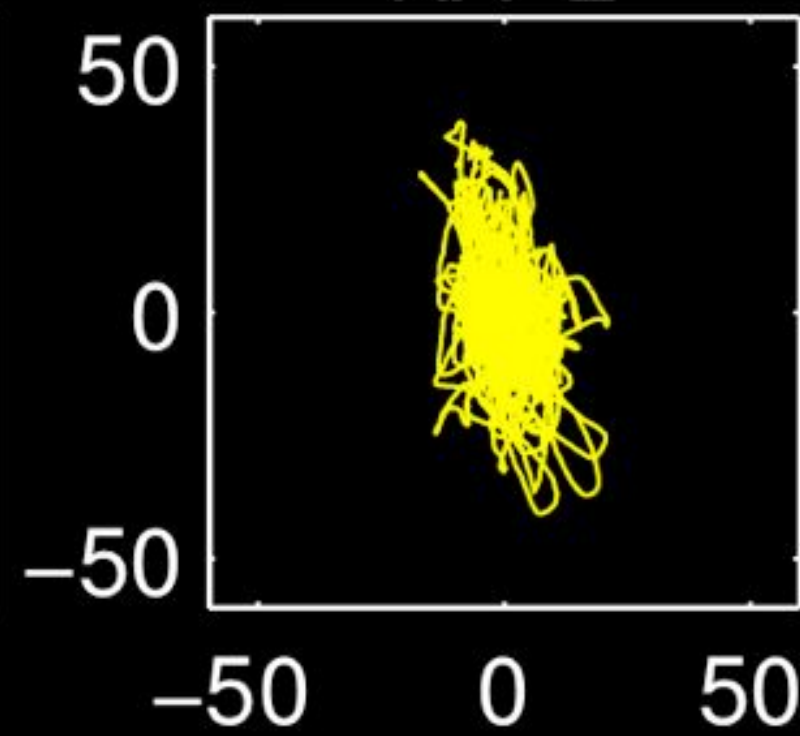
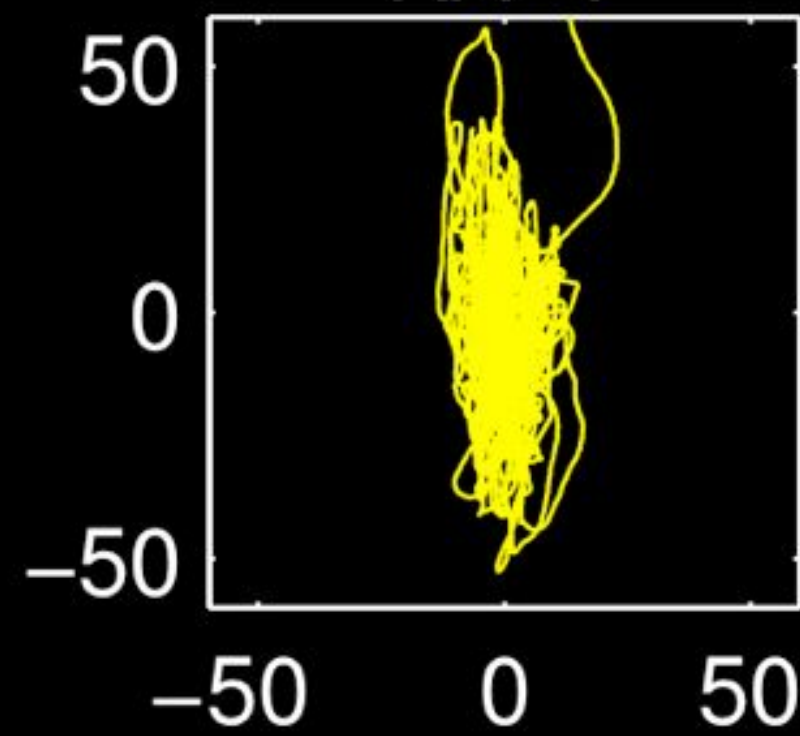
KA-2

KA-3

KA-12

KA-13

KA-14





ca 7 mm/s





# NM i Stillstand

**Next: Oslo, March 2018!**





SVERM

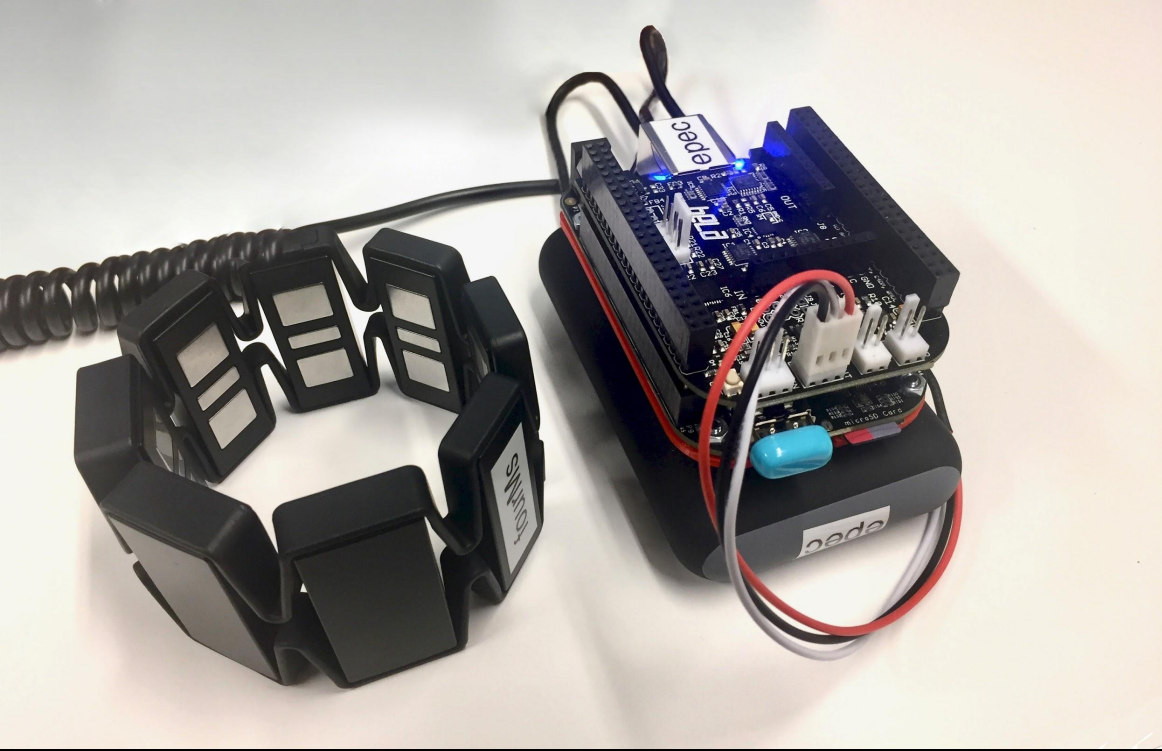






NIME







# Machine Learning

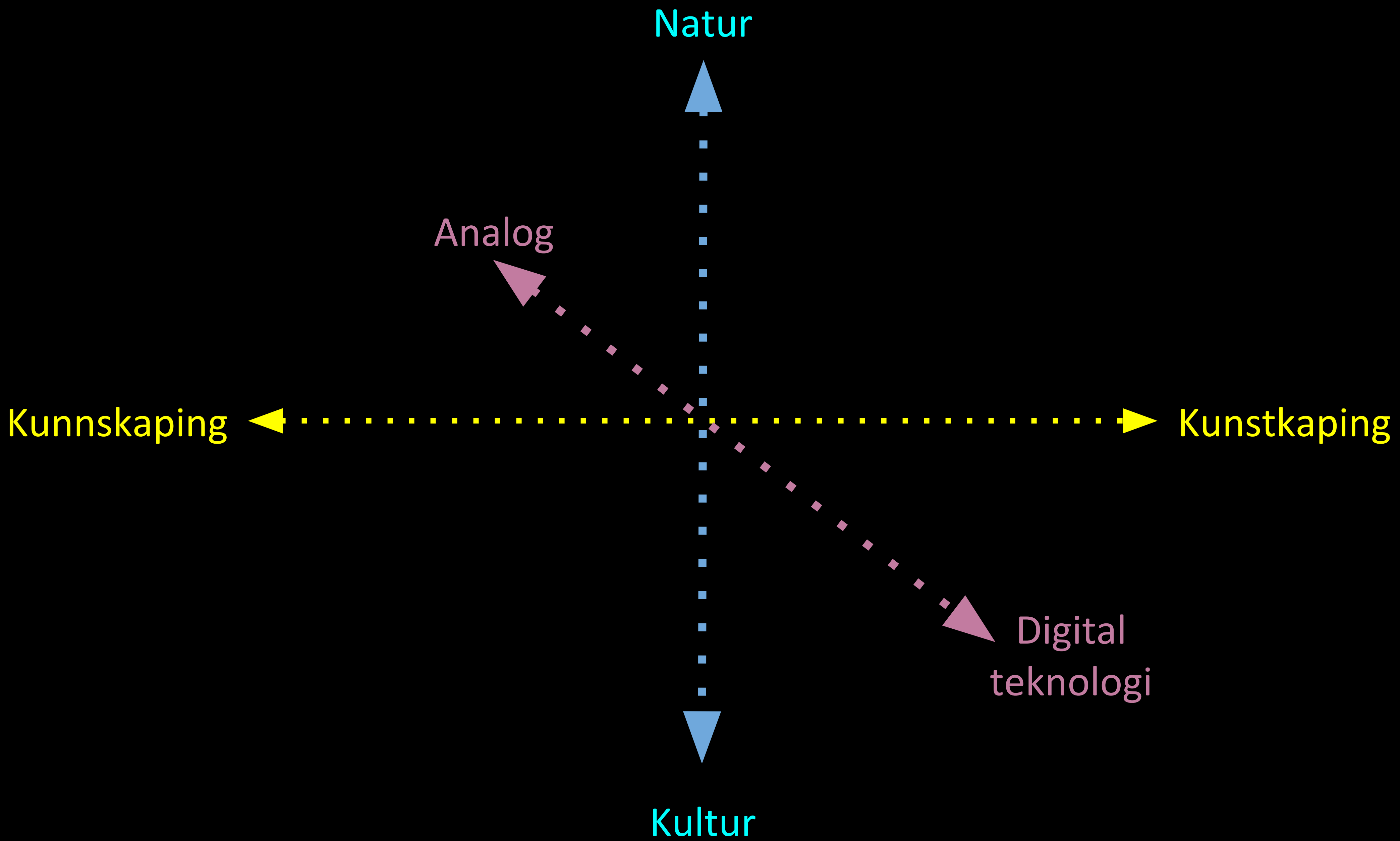




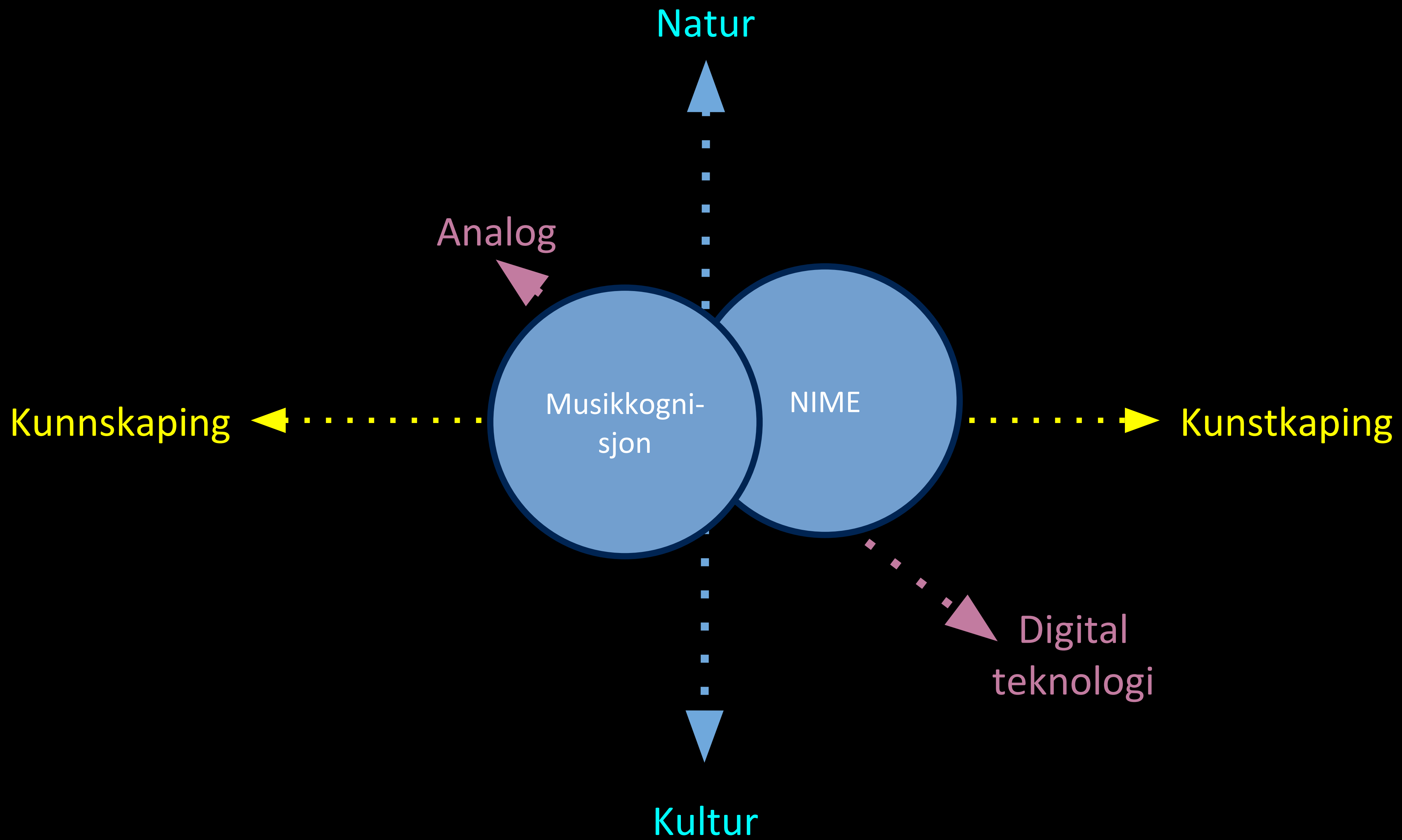


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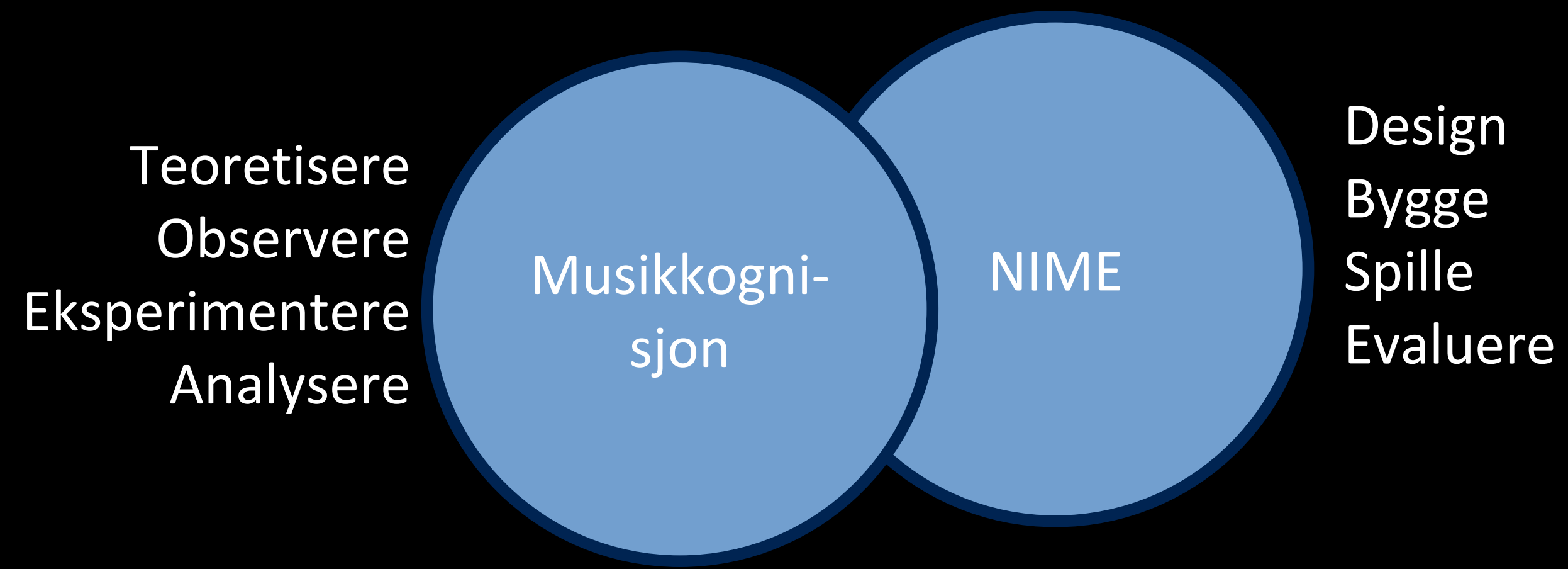
















# RITMO

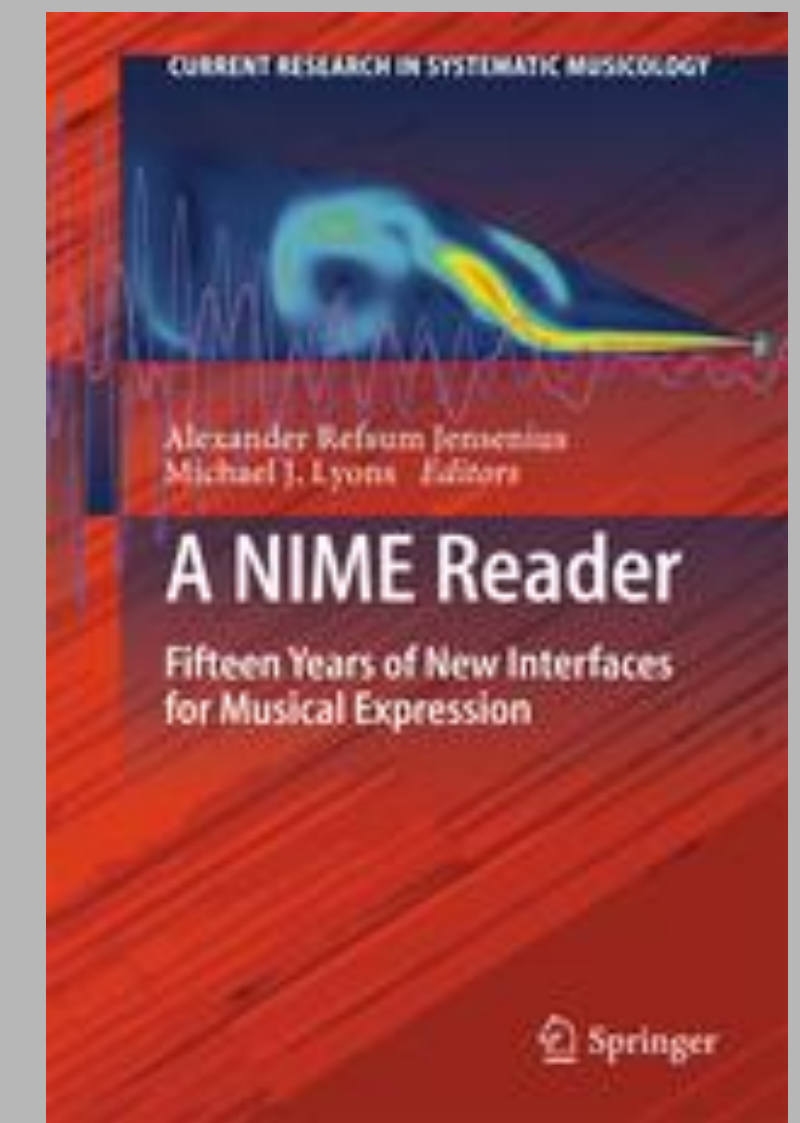
## Centre for Interdisciplinary Studies in Rhythm, Time and Motion

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Hiring PhDs and postdocs in musicology, psychology and informatics soon!



Music Moves @ Futurelearn



Starting fall 2018:  
International joint Master's programme in  
**Music, Communication & Technology**



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