



University  
of Basel

Department of  
Biomedical Engineering



Seminar Series:

## Latest Breakthroughs in Biomedical Engineering Research

Location: DBE Science Lounge, Hegenheimermattweg 167C, 4123 Allschwil

Date & Time: Thursday 08.05.2025 | 16:30 – 17:30

Host: Prof. Elke Viehweger & PD Dr. Morgan Sangeux

# Applications of ultrasound in biomechanics

***Claudio Vergari***

*Institut de Biomécanique Humaine – Georges Charpak. Arts et Métiers, Paris, France*

## Abstract

Ultrasound methods represent a powerful tool in biomechanics, offering non-invasive, real-time insights into musculoskeletal structures, functions and mechanical behavior. Despite its advantages, developing novel and robust protocols for ultrasound applications presents significant challenges, which include mitigating the inherent uncertainty of ultrasound imaging and the operator effect. This talk will explore recent applications of ultrasound in biomechanics, highlighting its role in assessing soft tissue mechanics.

## Biosketch

Claudio VERGARI graduated in medical engineering at Università Tor Vergata, in Rome, Italy, and pursued his career in research with a PhD on tendon biomechanics and ultrasound at the Ecole Nationale Vétérinaire d'Alfort, in France. He did several postdoctoral experiences in France and UK, on topics ranging from scoliosis clinical analysis to the multiscale mechanical characterization of the intervertebral disc. He is mainly interested in spinal biomechanics and spine pathologies, which he pursues through clinical research, in vitro experiments, numerical modeling and through the development of novel ultrasound applications in biomechanics. He is currently professor at the Institut de Biomécanique Humaine Georges Charpak.