



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 03.04.2025 | 16:30 – 17:30

Host: PD Dr. Francesco Santini

# **$^{31}\text{P}$ and $^1\text{H}$ MRS and MRI in skeletal muscle: A rather technical view**

***Martin Meyerspeer***

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## **Abstract**

The structure, function and metabolism of skeletal muscle can be investigated by MR imaging and spectroscopy.  $^{31}\text{P}$  MRS applied to exercising muscle is particularly interesting, as it can give access to time-resolved concentration estimates of high-energy metabolites. This can be combined with complementary information obtained from  $^1\text{H}$  MRS and MRI, which ideally should be acquired simultaneously, and from the same volume. I will give a brief overview of our previous work, highlight some of the MR-methodical and technical challenges, in particular in the detection of intramuscular lactate, and show our most recent developments in RF hardware and pulse-sequence design related to these questions.

## **Biosketch**

Assoc. Prof. Martin Meyerspeer holds a PhD in Physics and is specialised in in vivo Magnetic Resonance Spectroscopy. His main research interests are development of pulse sequences and protocols for multi-nuclear NMR spectroscopy and NMR imaging at ultra-high field, data acquisition and processing. A special focus is dynamic and localized  $^{31}\text{P}$  MR spectroscopy of exercising muscle.