

Surface EMG: Applications and Analysis Concepts

A theoretical and practical presentation of selected EMG setups and analysis strategies in Sports Science investigations

Invited speaker:	Peter Konrad PhD, ProPhysio Centrum für Physiotherapie Rehabilitation und Prävention – Köln, Germany
Date, Location:	At applicants' choice, his own institute/company
Presentation:	Scientific lecture and practical demonstrations
Participants:	Sports medicine and sports sciences researchers, trainers

Topics:

Introduction

- EMG as a biomechanical method in multi-parametric setups
- Origin and nature of the EMG signal
- Motor unit recruitment and firing
- Detection techniques and amplifier principles

Analysis and Interpretation Strategies

- Signal processing
- Amplitude and time normalization techniques
- Typical analysis questions answered with the use of EMG
- Amplitude and frequency based parameter
- Interpretation guidelines

Application Examples (in theory and practice)

- Analysis of muscle activation patterns in sports movements
- Evaluation of (strength-) training exercises
- EMG – Fatigue Analysis
- EMG and Postural stability
- EMG based jump testing
- EMG and Isokinetics
- Gait Analysis