

Meisterklasse HfM Karlsruhe  
**Music Information Retrieval**

## Introduction

**Meinard Müller, Christof Weiss**

International Audio Laboratories Erlangen

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## Meinard Müller

- 2007 Habilitation  
Bonn University
- 2007 – 2012  
Senior Researcher  
Saarland University & MPI Informatik
- Since 2012  
Professor: Semantic Audio Processing  
Erlangen-Nürnberg University



## Christof Weiß

- 2006 – 2012 Physics Diploma  
Würzburg University
- 2006 – 2012 Composition Diploma  
Würzburg University of Music
- 2012 – 2015: PhD  
Ilmenau, Fraunhofer IDMT
- Since 2015: AudioLabs Erlangen
- Freelancing composer



## Group Members

- Christof Weiß
- Frank Zalkow
- Stefan Balke
- Christian Dittmar
- Patricio López-Serrano



## Where are we?

### Fraunhofer-Gesellschaft

- Europe's largest organization for applied research
- 18,000 employees worldwide, total budget: 1.5 billion €
- 60 institutes covering a broad range of research areas

### Fraunhofer Institute for Integrated Circuits IIS

- Largest Fraunhofer institute
- Staff >700 people
- MP3



## Where are we?

### Friedrich-Alexander Universität Erlangen-Nürnberg (FAU)

- One of Germany's largest universities
- More than 35,000 students



### Collaboration between FAU and Fraunhofer IIS

- Roots of "MP3" audio compression scheme
- Research on audio coding in Erlangen since 1981

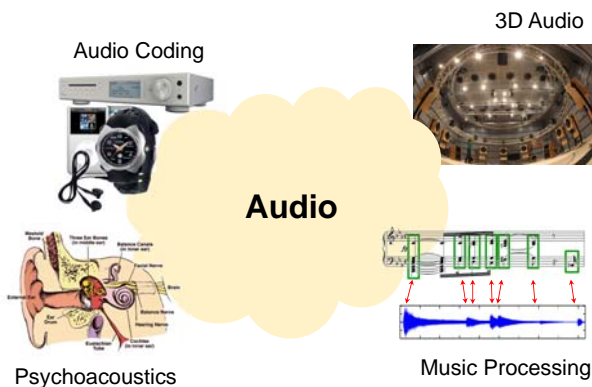
## International Audio Laboratories Erlangen



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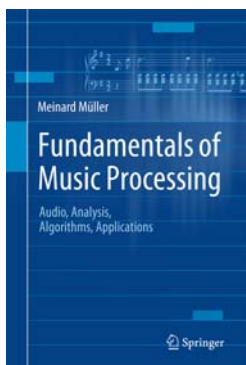


## AudioLabs – FAU

- Prof. Dr. Jürgen Herre  
Audio Coding
- Prof. Dr. Bernd Edler  
Audio Signal Analysis
- Prof. Dr. Meinard Müller  
Semantic Audio Processing
- Prof. Dr. Emanuel Habets  
Spatial Audio Signal Processing
- Dr. Stefan Turowski  
Coordinator AudioLabs-FAU



## Book: Fundamentals of Music Processing



Meinard Müller  
Fundamentals of Music Processing  
Audio, Analysis, Algorithms, Applications  
483 p., 249 illus., hardcover  
ISBN: 978-3-319-21944-8  
Springer, 2015

Accompanying website:  
[www.music-processing.de](http://www.music-processing.de)

## Book: Fundamentals of Music Processing

Chapter	Music Processing Scenario
1	Music Representations
2	Fourier Analysis of Signals
3	Music Synchronization
4	Music Structure Analysis
5	Chord Recognition
6	Tempo and Beat Tracking
7	Content-Based Audio Retrieval
8	Musically Informed Audio Decomposition

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## Meisterklasse MIR

Mittwoch

14:00 - 16:00: Introduction + Music Representations  
16:00 - 18:00: Audio Features (1) + Harmony Analysis (1)

Donnerstag

10:00 - 12:00: Audio Features (2) + Harmony Analysis (2)  
13:00 - 15:00: Music Synchronization  
15:00 - 17:00: Harmony Analysis (3)

Freitag

10:00 - 12:00: Further Topics

Course Material:

[https://www.audiolabs-erlangen.de/resources/MIR/2017\\_CourseMIR\\_HfM-Karlsruhe](https://www.audiolabs-erlangen.de/resources/MIR/2017_CourseMIR_HfM-Karlsruhe)

## MIR-Related Events in Germany

AES Conference on  
Semantic Audio  
22 – 24 June 2017  
Erlangen



GI Jahrestagung  
25 – 29 September 2017  
Chemnitz

Gesellschaft  
für Informatik



- Workshop: Musik trifft Informatik  
26 September 2017
- Tutorial: Musikverarbeitung  
25 September 2017