



#### **Motions in Man and Machine**

#### Projektthemen am KIT

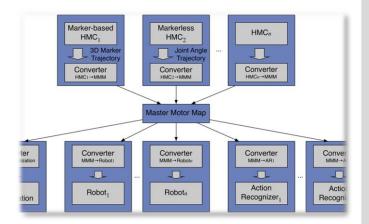
Institute for Anthropomatics and Robotics (IAR), High Performance Humanoid Technologies (H2T)

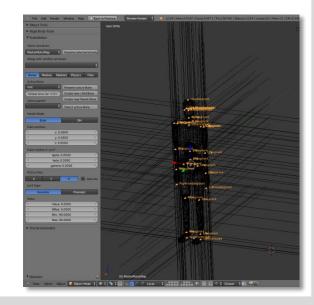


### **Human Motion Capturing & Character Animation**



- Mapping of Human Motion Capture data to reference model (Master Motor map)
  - Enables the transfer to humanoid robots/characters
- Tasks
  - Recording of motion(s) (VICON)
  - Preparation of target robot/character model (Blender RobotEditor)
  - Conversion of motion (MMM framework)
    - VICON → MMM
    - MMM → target model (marker set adaptation of target model)
  - Rendering of motion video(s) (Blender RobotEditor)
  - Documentation of findings

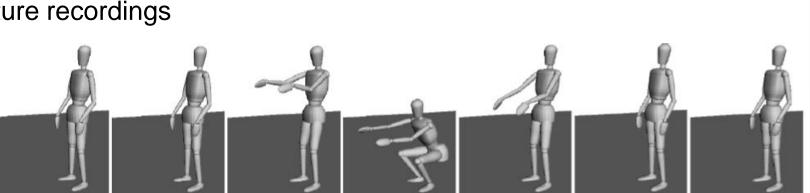




## Segmentation of Human Whole-Body Motion



- Partitioning of human motion into distinct parts
- Essential process in the further processing of motion capture data for various applications
- Parts of the seminar topic:
- 1. Literature research: Which segmentation techniques do exist and how do they work?
- Implementation of one or more selected segmentation methods in C++
- Evaluation of the implementation using Vicon motion capture recordings





# Learning and Parameterization of Motion Primitives from Human Observation



- Learning of parameterizable motion primitives (MP) representations from captured demonstrations
  - Dynamic Movement Primitives

Motions in Man and Machine 2016

Betreuer: Mirko Wächter

- Reproduction of learned MPs with different parameters
- Execution of MPs on human model in simulation





