

# Motion analysis of lower limbs during Kendo swinging



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<b>Affiliations</b>	JSME (The Japan Society of Mechanical Engineers)		
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<b>Keywords</b>	Kendo, Motion Capture, Force Plate, High Speed Camera, Motion Analysis		
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<b>Technical Support Skills</b>	<ul style="list-style-type: none"> <li>• Analysis of Kendo motion</li> </ul>		
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## Research Contents Motion analysis of lower limbs during Kendo swinging

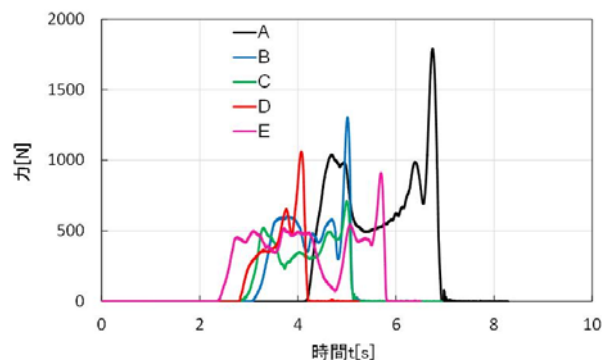
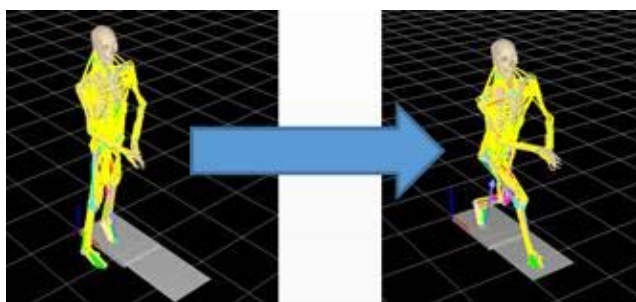
### ◎Background and Purpose

In recent years, in research fields such as gait analysis, ergonomics and sport, video processing has been used. A high speed camera can observe a motion slowly. We can get an animation of a slow motion by taking a number of frames at the time of photography. A motion capture is also a technique to record the movement of a real person and object digitally. It has been used as a tool of analysis of movement for various sport simulations or data collection of a physical movement of players. Sports guidance needs its knowledge and experience. In addition, its guidance may become sensuous. For each personality, it can't apply only the one guidance to all persons. It needs to be analyzed using a motion capture one by one. Using above tools, we can do visual guidance and can reduce injuries.

**We visualize a movement of the kendo, and analysis a motion of the lower limbs during swing of an experimenter or a beginner.**

### ◎Results

- Velocity measurement of the tip of the shinai
- Motion analysis of lower limbs and analysis of tendon motion by floor reaction force



### Available Facilities and Equipment

※The following apparatuses are in Mimura laboratory.

Motion Capture System	•MAC3D System(Motion Analysis)
Motion Capture Camera	•Raptor-E(Motion Analysis)
Force Plate	•TF-4046-B(TEC)
Motion muscular	•(nac IMAGE TECHNOLOGY)
High Speed Camera	•MEMRECAM HX-6(nac IMAGE TECHNOLOGY)