

## Biomechanical ToolKit: A Step Toward Independency Between Motion Capture Data and Biomechanical Analysis

The goal of this workshop is to present the usage of the [Biomechanical ToolKit](#) library in a context of gait analysis and bicycle pedaling analysis. The workshop will be divided in several parts. Firstly, a brief history of the project will be presented, including its original goals and its general behavior in Matlab and Python. Then, an interactive demonstration of the software [Mokka](#) (MOtion Analysis Kinematic and Kinetic Analysis) will be realized with the possibility for the auditory to do the same (i.e., bring your laptops!). This interactive demonstration will focus on visualization, modification, and processing of motion capture data. The second part will be on the next major evolution of the project that is currently in progress. Indeed, this project wants to go forward by proposing a generic architecture for all types of measurements but also by introducing biomechanical models. Thus, it will better improve and help exchanges and collaborations between laboratories. As an example, anyone could compute joint kinematics and kinetics not only using the model provided with their motion capture system but also with a variety of known models proposed in literature (e.g., ISB, CAST) or by other manufacturers (e.g., PlugInGait, Helen Hayes). The behavior of the proposed architecture will be presented, including the comparison of models results. The internal changes required compared to the available packages of BTK will be discussed. Finally, the last part will be an open questions session regarding the usage of BTK/Mokka by the auditory and its evolution towards sport analysis.

